



Power Joist®



Canadian Limit States Design
(LSD) CCMC 13053R

Ontario Minister's Ruling #07-16-174

User guide

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Joining Forces



Anthony Forest Products Company and Domtar Corporation are in a joint venture to manufacture and distribute **Power Joist®**, a high quality solid lumber flange I-joist. This value-added product upholds Anthony's and Domtar's commitment to using lumber to its highest strength potential, while also offering an environmentally sound alternative to large dimension lumber joists. In addition to our financial contribution to the 50-50 partnership, Anthony and Domtar bring unique skills to the venture. Domtar contributes its expertise in mill management, along with a reliable supply of MSR lumber. Anthony adds its renowned customer service infrastructure, **Superior Power Products** line and nationwide distribution network.

About the Partners

Anthony Forest Products Company, a family-owned business founded in 1916, is headquartered in El Dorado, Arkansas. The company operates lumber and wood chip mills, as well as two engineered wood laminating plants in the southern US. It has 43 years of solid experience in engineered wood products.

Domtar Corporation (NYSE/TSX:UFS) is the largest integrated manufacturer of uncoated free sheet paper in North America and the second largest in the world based on production capacity, and is also a manufacturer of paper grade, fluff and specialty pulp. The Company designs, manufactures, markets and distributes a wide range of business, commercial printing and publication as well as converting and specialty papers, part of a family of environmentally and socially responsible papers. Domtar owns and operates Domtar Distribution Group, an extensive network of strategically located paper distribution facilities. Domtar also produces lumber and other specialty and industrial wood products. The Company employs nearly 13,000 people. For more information visit www.domtar.com.



Environmental Forestry

Domtar management practices are designed to pass on healthy forests to future generations. In this context, independent third-party verification of its forest management practices is one of Domtar's forest policy commitments. All forest lands that Domtar manages are certified according to internationally recognized environmental standards, such as ISO 14001 and the Forest Stewardship Council (FSC).

The Joint-Venture Plant

This state-of-the-art, high efficiency, one piece flow facility is located in Sault Ste. Marie, Ontario, Canada. This strategically located plant provides fast and efficient access to the entire North American market.



The Power Joist®

The solid lumber flange I-joist is made from 2x3 and 2x4 MSR lumber. Power Joist is the latest addition to the Superior Power Products line, which includes Power Beam®, Power Header®, Power Preserved Glulam®, Power Plank®, Power Log®, and Power Column®.

Anthony-Domtar Inc.'s power-of-two venture is a combination that brings more choices, more value and more power... to the customer.

Anthony Power Joist

Say What They Do and Do What They Say

Anthony Power Joist has made it easy to make the right choice for floor and roof applications in residential and non-residential construction. ADI Power Joists are manufactured in accordance with ASTM D 5055 and ASTM D 7247.

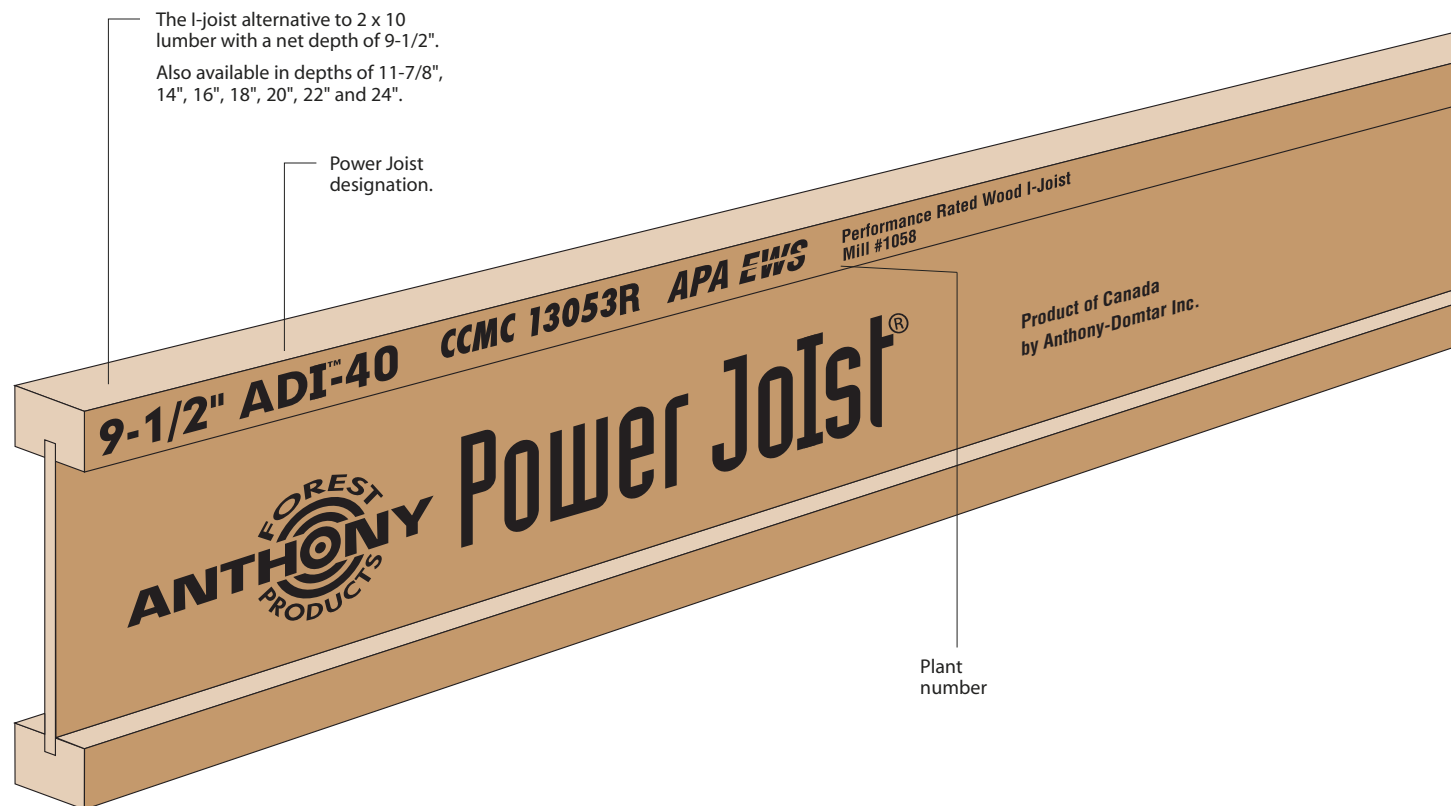
Power Joist provide a high performance alternative to dimension lumber joists/floor trusses for residential and non-residential floor and roof applications. This guide will help you efficiently use ADI Power Joist by leading you through the simple steps of product selection, specification, and installation.

The APA trademark signifies that the I-joist manufacturer is committed to the strict quality standards of Engineered Wood Systems (EWS), a related corporation of APA. APA's rigorous program of third party quality verification and testing is designed to assure predictable product performance.

This guide explains floor and roof applications for residential and non-residential construction. Review by a design professional is required for applications beyond the scope of this document.

Simple to specify. Easy to install. Less confusion. ADI Power Joists are the right choice for your next construction project.

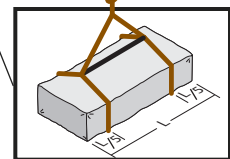
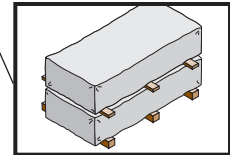
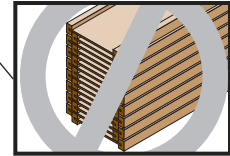
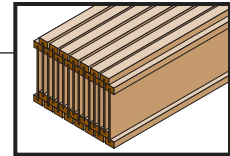
Power Joist Labeling Example



Anthony Power Joist

Storage and Handling Guidelines

1. Store, stack and handle Power Joist vertically and level only.
2. Do not store Power Joists in direct contact with the ground and or flatwise.
3. Protect Power Joists from weather, and use stickers to separate bundles.
4. To further protect Power Joists from dirt and weather, do not open bundles until time of installation.
5. When lifting Power Joists with a crane on the job site, take a few simple precautions to prevent damage to the Power Joists and injury to your work crew.
 - Pick Power Joists in bundles as shipped by the supplier.
 - Orient the bundles so that the webs of the Power Joists are vertical.
 - Pick the bundles at the 5th points, using a spreader bar if necessary.
7. Do not twist or apply loads to the Power Joist when horizontal.
8. *Never* use or try to repair a damaged Power Joist.

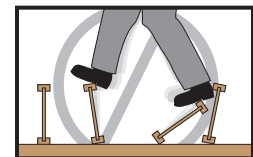


Safety Precautions

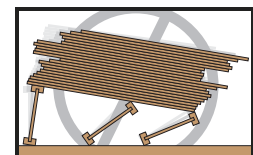
WARNING: Power Joists are not stable until completely installed, and will not carry any load until fully braced and sheathed.

Avoid Accidents by Following These Important Guidelines:

1. Brace and nail each Power Joist as it is installed, using hangers, blocking panels, rim board, and/or cross-bridging at joist ends. When Power Joists are applied continuously over interior supports and a load-bearing wall is planned at the location, blocking will be required at the interior supports.
2. When the building is completed, the floor sheathing will provide lateral support for the top flanges of the Power Joists. Until this sheathing is applied, temporary bracing, often called struts, or temporary sheathing must be applied to prevent Power Joist rollover or buckling.
 - Temporary bracing or struts must be 1 x 4 inch minimum, at least 8' long and spaced no more than 8' on center, and must be secured with a minimum of two 8d nails fastened to the top surface of each Power Joist. Nail bracing to a lateral restraint at the end of each bay. Lap ends of adjoining bracing over at least two Power Joists.
 - Or, sheathing (temporary or permanent) can be nailed to the top flange of the first 4' of Power Joists at the end of the bay.
3. For cantilevered Power Joists, brace top and bottom flanges, and brace ends with closure panels, rim board, or cross-bridging.
4. Install and nail permanent sheathing to each Power Joist before placing loads on the floor system. Then, stack building materials over beams or walls only.
5. For temporary construction loads such as dry wall stocking see APA Publication J735A (Temporary Construction Loads Over I-joist Roofs).



Do not allow workers to walk on Power Joists until joists are fully installed and braced, or serious injuries can result.



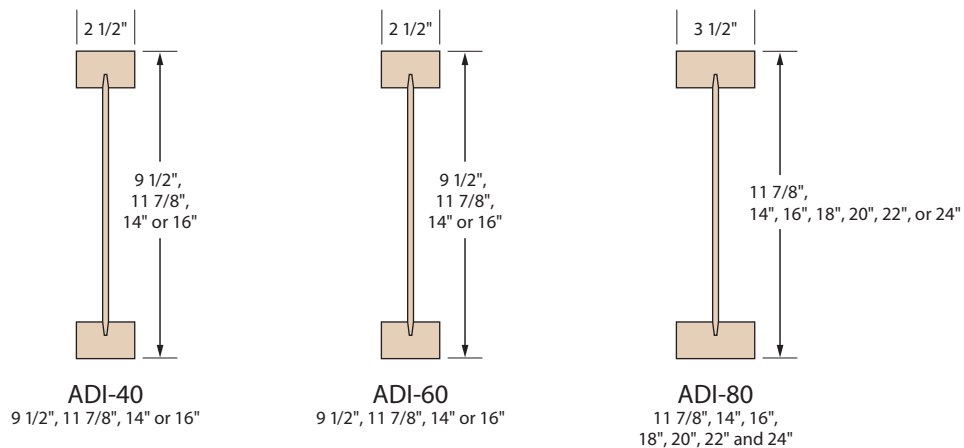
Never stack building materials over unsheathed Power Joists. Stack only over beams or walls.

Failure to follow applicable building codes and span ratings, failure to use allowable hole sizes and locations, or failure to use web stiffeners when required can result in serious accidents. Follow these installation guidelines carefully.

Selecting ADI Power Joist®

Product Description

The ADI Power Joist is an "I"-shaped engineered wood structural member designed for use in residential and non-residential floor and roof construction. ADI's are prefabricated using SPF MSR lumber flanges and OSB web, bonded together with exterior-type adhesives. It is recommended that Power Joists be designed in accordance with the CCMC vibration procedure for residential floor applications, a criteria which provides superior floor performance. Power Joists are limited to a $L/480$ maximum live load deflection for residential and non-residential floor applications. ADI Power Joists are identified by their depth followed by a designation such as ADI-40 which relates to the joist strength and stiffness. ADIs are manufactured to strict tolerances with the following characteristics:



- **Flanges** are MSR 2x3's and 2x4's.
- **Webs** are OSB and all are classified as Exposure 1 or Exterior and are 3/8" in thickness or greater.
- All ADIs are assembled using exterior-type adhesives that meet ASTM D 2559 and ASTM D 7247.
- ADIs are available in eight depths: 9-1/2", 11-7/8", 14", 16", 18", 20", 22" and 24".
- ADIs of the same depth are manufactured with various flange widths; flange width is an important design consideration when specifying hangers.
- ADI Power Joists are manufactured up to 64' in length. These lengths are cut to frequently used lengths such as 16' to 36', in 2' increments for jobsite delivery. Check local supplier for availability.
- Power Joists are listed and approved in Canada under CCMC 13053R and Ontario Minister's Ruling #07-16-174.

Allowable Floor Spans

Maximum Allowable Spans

The specific ADI designation needed for your application is easily determined by selecting the span needed and then choosing the ADI that meets your span, spacing, and uniform loading criteria.

Tables 1 and 1a are for simple or multiple span applications. The use of these tables will provide maximum spans for the indicated spacings and span conditions.

To illustrate the selection of an ADI product, assume a design simple span of 15'-10" for 40/15 loading. For architectural reasons, limit the Power Joist depth to 11-7/8" and Power Joist spacing to 19.2" on center with 5/8" OSB subfloor. From the 11-7/8" entry in Table 1, look down the 19.2" o.c. spacing column. Select ADI-40 11-7/8" Power Joist.

While any of the ADIs shown in Tables 1 and 1a may be

available in a specific market area, availability of any ADI product should be verified prior to final product selection.

The allowable spans in the tables in this user guide indicate the allowable clear and multiple spans for various joist spacings under typical residential uniform floor loads (40 psf live load and 15 psf dead load) for glued-nailed systems.

Floor sheathing must be field glued using approved construction adhesives to the Power Joist flanges to achieve the ADI allowable spans.

Use of these span tables is limited to uniform load conditions and ADI floor spans shall not exceed these allowable spans. ADI Power Joist can be used for other applications such as roofs and ceilings to support line loads or concentrated loads, etc., when properly engineered. Consult Anthony Forest Products.

Table 1							
Allowable Spans for Floor ADI Power Joist							
Simple span only — Glued subfloor* — On center spacing							
MAXIMUM FLOOR SPAN (ft)				GLUED SUBFLOOR			
Live	Dead	Series	Depth (in)	On center joist spacing (in)			
				12	16	19.2	24
40	15	ADI 40	9 1/2	15'-8"	14'-9"	14'-4"	14'-3"
			11 7/8	17'-7"	16'-7"	16'-0"	16'-2"
			14	19'-4"	18'-0"	17'-5"	17'-6"
			16	21'-1"	19'-6"	18'-9"	18'-11"
		ADI 60	9 1/2	16'-2"	15'-3"	14'-9"	14'-10"
			11 7/8	18'-2"	17'-1"	16'-6"	16'-8"
			14	20'-2"	18'-8"	17'-11"	18'-1"
			16	22'-0"	20'-5"	19'-6"	19'-8"
		ADI 80	11 7/8	19'-6"	18'-0"	17'-5"	17'-6"
			14	21'-8"	20'-0"	19'-2"	19'-4"
			16	23'-7"	21'-10"	20'-10"	21'-0"
			18	25'-4"	23'-5"	22'-5"	22'-6"
			20	27'-1"	25'-0"	23'-11"	24'-0"
			22	28'-9"	26'-7"	25'-4"	25'-6"
			24	30'-5"	28'-0"	26'-9"	26'-11"

Table 1a							
Allowable Spans for Floor ADI Power Joist							
Multiple span only — Glued subfloor* — On center spacing							
MAXIMUM FLOOR SPAN (ft)				GLUED SUBFLOOR			
Live	Dead	Series	Depth (in)	On center joist spacing (in)			
				12	16	19.2	24
40	15	ADI 40	9 1/2	16'-11"	16'-0"	15'-6"	14'-10"
			11 7/8	19'-3"	17'-11"	17'-4"	17'-0"
			14	21'-5"	19'-10"	19'-0"	18'-8"
			16	23'-3"	21'-7"	20'-8"	20'-1"
		ADI 60	9 1/2	17'-6"	16'-6"	16'-0"	16'-1"
			11 7/8	20'-1"	18'-7"	17'-11"	18'-0"
			14	22'-4"	20'-8"	19'-10"	20'-0"
			16	24'-4"	22'-7"	21'-7"	21'-9"
		ADI 80	11 7/8	21'-7"	20'-0"	19'-1"	19'-3"
			14	24'-0"	22'-2"	21'-3"	21'-4"
			16	26'-2"	24'-2"	23'-1"	23'-3"
			18	28'-1"	26'-0"	24'-10"	24'-11"
			20	30'-0"	27'-9"	26'-6"	26'-8"
			22	31'-10"	29'-5"	28'-1"	28'-3"
			24	34'-3"	31'-1"	29'-8"	29'-9"

*For other type floor assemblies, please contact Anthony Forest at 800 221-2326.

Notes:

- Design is to CSA O86S1-05 and CCMC vibration concluding report dated September 4, 1997.
- Web stiffeners are not required for Power Joists up to 16" deep. Joists 18" and deeper require stiffeners at each support.
- Use in dry service conditions only.
- Provide lateral support at points of bearing to prevent twisting of joists.
- Uniform load deflection criteria: L/360 on live load and L/240 on total load calculated using bare joist properties only; L/480 on live load based on glued subfloor.
- Elastomeric adhesives for gluing of the subfloor shall conform to CGSB Standard CAN-CGSB-71.26-M88
- Minimum bearing length to be 1-3/4"
- Vibration spans are based on 19/32" OSB or 5/8" Canadian Softwood Plywood for joist spacing of 12" to 19.2", and 23/32" OSB or 3/4" Canadian Softwood Plywood for joists spaced at 24" o.c. No ceiling, concrete topping or bridging elements.
- Spans listed are clear distances between supports.

Allowable Floor Uniform Load Capacities

Table 2
Floor ADI Power Joist — ADI 40
Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240	
8	301			344				419				419				419
9	224	299		306	357			374				374				374
10	170	227		276	274			337				337				337
11	132	176		252	215	287		308	301			308				308
12	104	139	209	231	171	228		282	241			282				282
13	84	112	168	208	138	184		261	195	260		261	258			261
14	68	91	137	180	113	151	226	233	160	214		243	213			243
15	56	75	113	157	93	125	187	203	133	178		227	177			227
16	47	62	94	138	78	104	157	179	112	149		213	149	199		213
17	39	52	79	122	66	88	132	159	94	126	189	191	126	168		201
18	33	45	67	109	56	75	112	142	80	107	161	171	108	144		190
19	28	38	57	98	48	64	96	127	69	92	139	153	93	124		178
20	24	33	49	89	41	55	83	115	60	80	120	138	80	107		161
21	21	28	43	80	36	48	72	104	52	69	104	126	70	94	141	146
22					31	42	63	95	45	61	91	115	61	82	123	133
23					28	37	56	87	40	54	81	105	54	72	109	122
24					24	33	49	80	35	47	71	96	48	64	96	112
25					22	29	44	74	31	42	63	89	43	57	86	103
26					19	26	39	68	28	37	56	82	38	51	76	95
27									25	34	51	76	34	46	69	88
28									22	30	45	71	31	41	62	82
29									20	27	41	66	28	37	56	77
30									18	25	37	62	25	33	50	72
31									17	22	34	58	23	30	46	67

Table 3
Floor ADI Power Joist — ADI 60
Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240	
8				344				419				419				419
9	258			306				374				374				374
10	197	263		276	316			337				337				337
11	154	205		252	249			308				308				308
12	122	163		231	199	265		282	280			282				282
13	98	131	197	213	161	215		261	228			261				261
14	80	107	161	198	132	177		243	188			243				243
15	66	88	133	185	110	146	220	227	157	209		227	208			227
16	55	74	111	174	92	123	184	213	132	176		213	176			213
17	46	62	93	164	78	104	156	201	112	149		201	149	199		201
18	39	53	79	151	66	88	133	190	96	128		190	128	171		190
19	34	45	68	136	57	76	114	176	82	110	165	180	110	147		180
20	29	39	59	123	49	66	99	159	71	95	143	171	96	128		171
21	25	34	51	111	43	57	86	144	62	83	125	163	84	112		163
22					37	50	75	132	54	73	109	156	74	98	148	156
23					33	44	66	120	48	64	96	145	65	87	130	149
24					29	39	59	111	42	57	85	133	57	77	115	143
25					26	35	52	102	38	50	76	123	51	68	103	137
26					23	31	46	94	34	45	68	114	46	61	92	132
27									30	40	61	105	41	55	82	122
28									27	36	55	98	37	49	74	114
29									24	33	49	91	33	45	67	106
30									22	30	45	85	30	40	61	99
31									20	27	41	80	27	37	55	93

Allowable Floor Uniform Load Capacities

Table 4
Floor ADI Power Joist — ADI 80
Allowable Uniform Loads (PLF)

Clear Span (ft)	11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240	
8				420				459				487
9				375				410				434
10				338				370				392
11				308				337				357
12	256			283				310				328
13	210			262				286				303
14	173	231		243	243			266				282
15	145	193		227	204			249				264
16	122	163		213	172	230		234	227			247
17	103	138		201	147	196		220	194			233
18	88	118	177	190	126	168		208	167			220
19	76	102	153	180	109	145		197	145	193		209
20	66	88	133	171	95	126		187	126	168		199
21	58	77	116	163	83	111	166	179	110	147		189
22	51	68	102	156	73	97	146	171	97	130		181
23	45	60	90	149	64	86	129	163	86	115	173	173
24	39	53	79	143	57	76	115	156	76	102	153	166
25	35	47	71	137	51	68	102	150	68	91	137	159
26	31	42	63	132	45	61	91	145	61	82	123	153
27					41	55	82	139	55	73	110	148
28					37	49	74	134	49	66	99	142
29					33	44	67	130	45	60	90	137
30					30	40	61	121	41	54	82	133
31					27	37	55	114	37	49	74	129

Notes for Table 2, 3, 4 and 5:

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only. Unfactored live load (either L/480 or L/360), unfactored total load and factored load must be checked. Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in tables 2,3 and 4.
9. Web stiffeners are required for all joists at each support in Table 5.
10. The loads have been calculated in accordance with CSA O86S1-05.
11. Vibration is not included in the design criteria for this table.

Table 5
Floor ADI Power Joist — ADI 80 with Web Stiffeners
Allowable Uniform Loads (PLF)

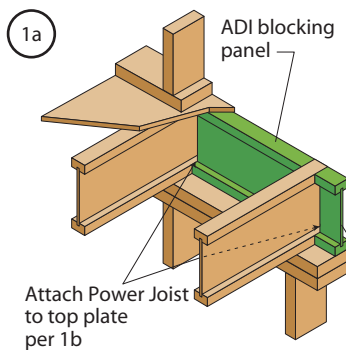
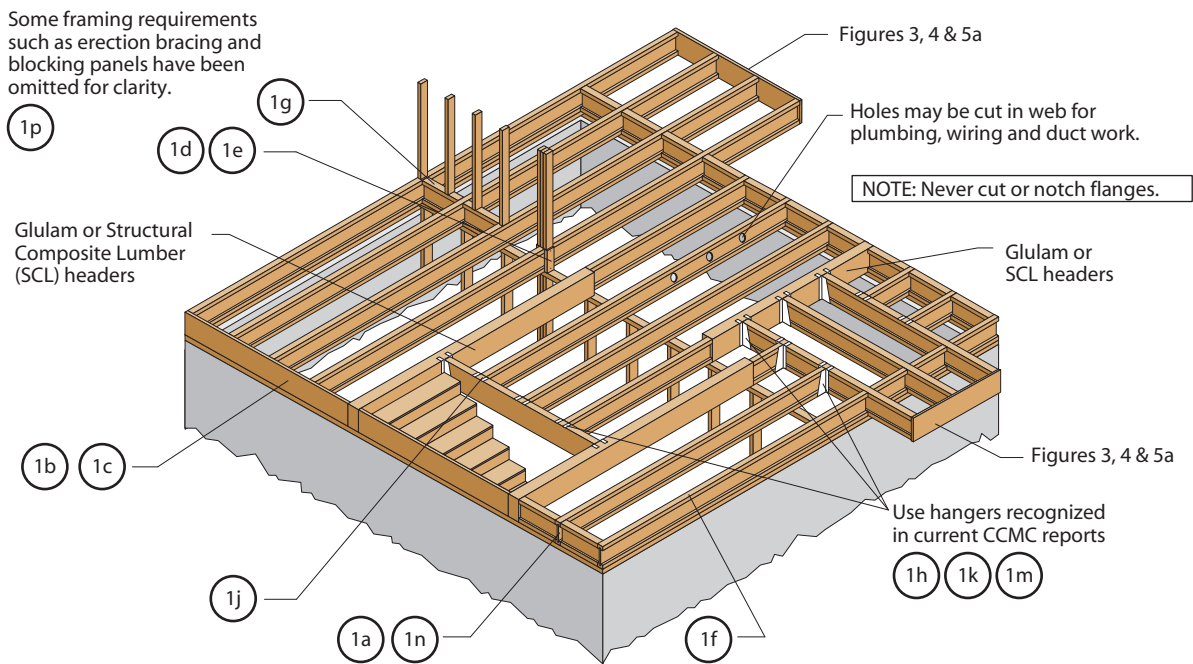
Clear Span (ft)	18"				20"				22"				24"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240		L/480	L/360	L/240	
8				601				601				601				601
9				536				536				536				536
10				484				484				484				484
11				441				441				441				441
12				405				405				405				405
13				375				375				375				375
14				348				348				348				348
15				326				326				326				326
16	284			306				306				306				306
17	244			288				288				288				288
18	211			272	260			272				272				272
19	183	244		258	226			258				258				258
20	160	213		245	198			245	239			245				245
21	140	187		234	174	232		234	211			234				234
22	124	165		223	154	205		223	187			223	222			223
23	110	146		214	136	182		214	166			214	198			214
24	97	130	195	205	122	162		205	148	197		205	177			205
25	87	116	175	197	109	145		197	133	177		197	158			197
26	78	104	157	189	98	130		189	119	159		189	143			189
27	70	94	141	182	88	117	176	182	107	143		182	129	172		182
28	63	85	127	176	79	106	159	176	97	130		176	116	155		176
29	57	77	115	170	72	96	144	170	88	118		170	106	141		170
30	52	70	105	160	65	87	131	164	80	107	161	164	96	129		164
31	47	63	95	150	60	80	120	159	73	98	147	159	88	117		159

Floor Framing and Construction Details

Figure 1

Typical ADI Power Joist® Floor Framing and Construction Details

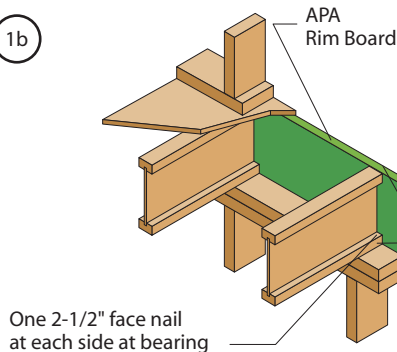
All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
ADI Joists (9-1/2" - 18")	3300

*The uniform vertical load is limited to a joist depth of 18 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 1d.

2-1/2" nails @ 6" o.c. to top plate (when used for lateral shear transfer, nail to bearing plate with same nailing as required for decking)



Blocking Panel or Rim Joist	Maximum Factored Uniform Vertical Load* (plf)
1-1/8" APA Rim Board Plus	8090
1-1/8" APA Rim Board	7340
1" APA Rim Board	5500

*The uniform vertical load capacity is limited to a rim board depth of 16 inches or less and is based on standard term load duration. It shall not be used in the design of a bending member, such as joist, header, or rafter. For concentrated vertical load transfer capacity, see 1d.

One 2-1/2" nail at top and bottom flange

Attach APA Rim Board to top plate using 2-1/2" common or box toenails @ 6" o.c.

To avoid splitting flange, start nails at least 1-1/2" from end of I-joist. Nails may be driven at an angle to avoid splitting of bearing plate.

Figure 1 Continued

Typical ADI Power Joist® Floor Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.

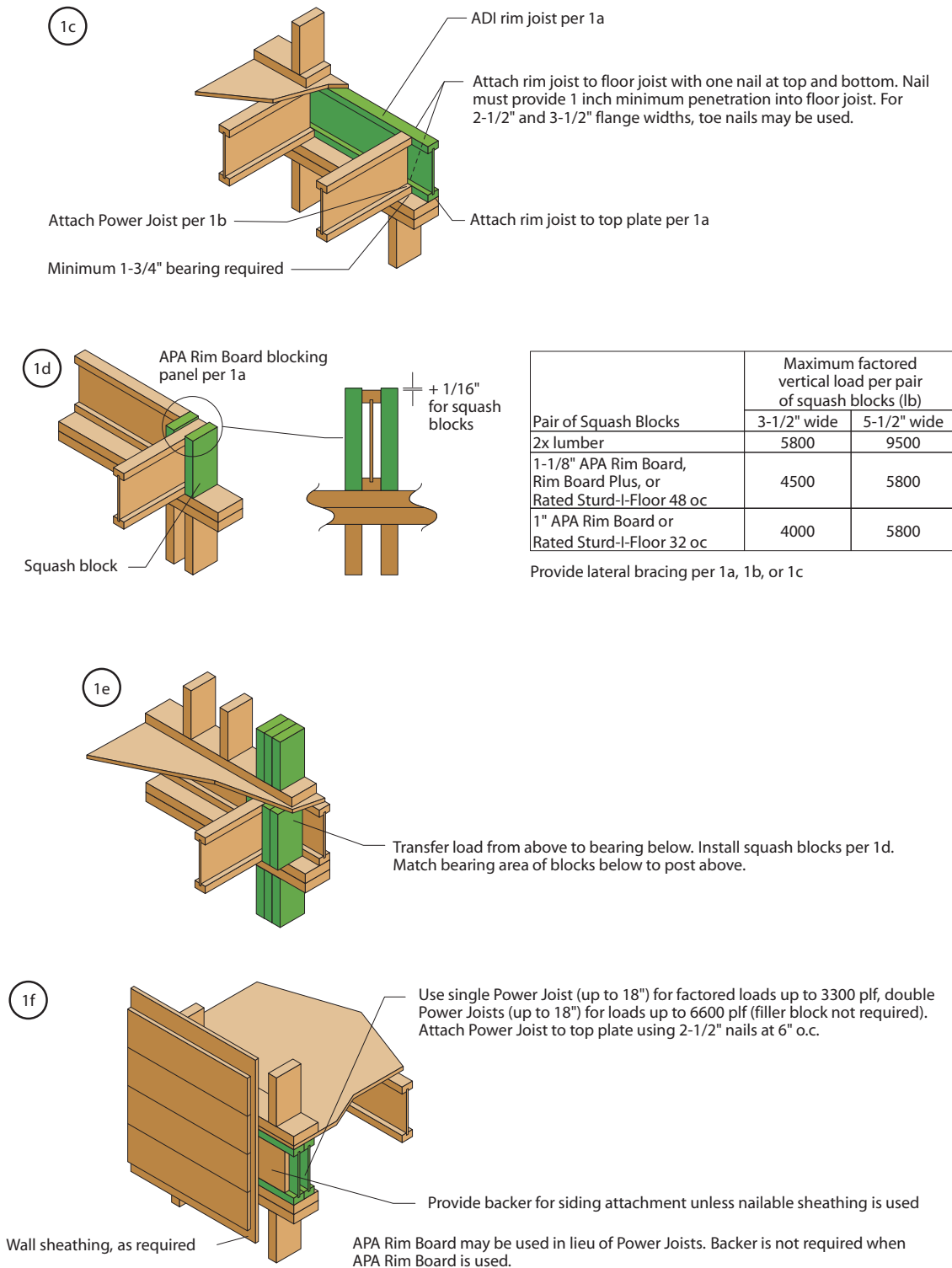
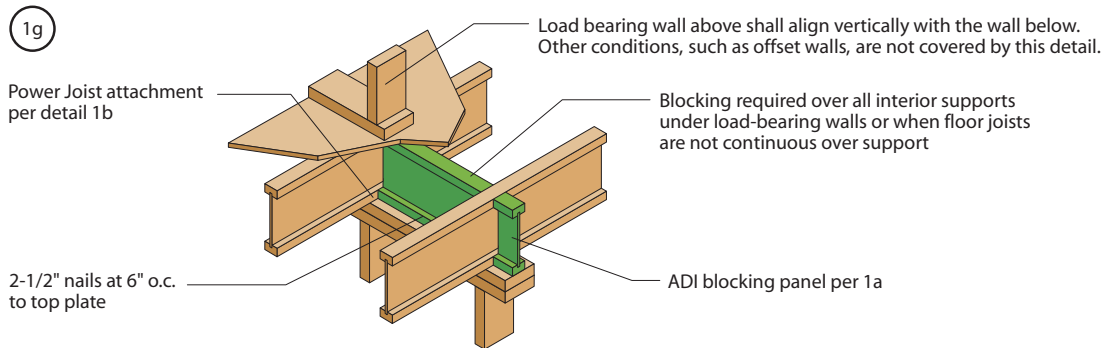


Figure 1 Continued

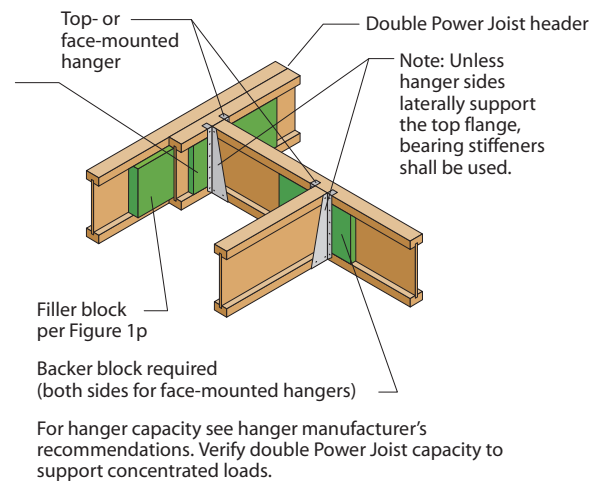
Typical ADI Power Joist® Floor Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



BACKER BLOCKS (Blocks must be long enough to permit required nailing without splitting)

Flange Width	Material Thickness Required*	Minimum
2-1/2"	1"	5-1/2"
3-1/2"	1-1/2"	7-1/4"



* Minimum grade for backer block material shall be Utility grade SPF (south) or better for solid sawn lumber and Rated Sheathing grade for wood structural panels.

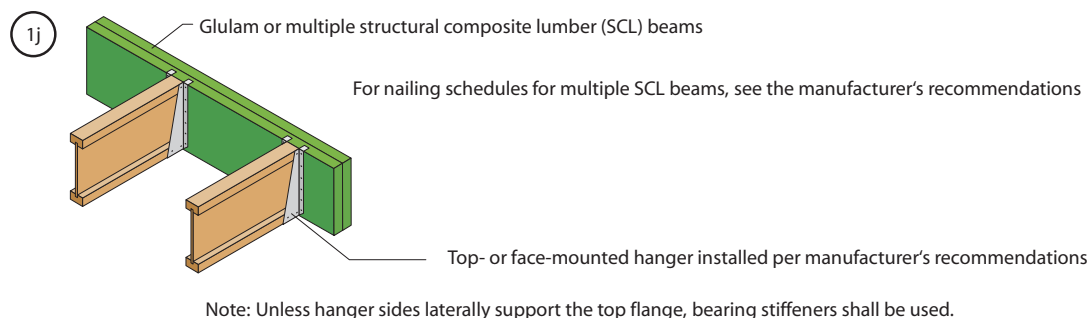
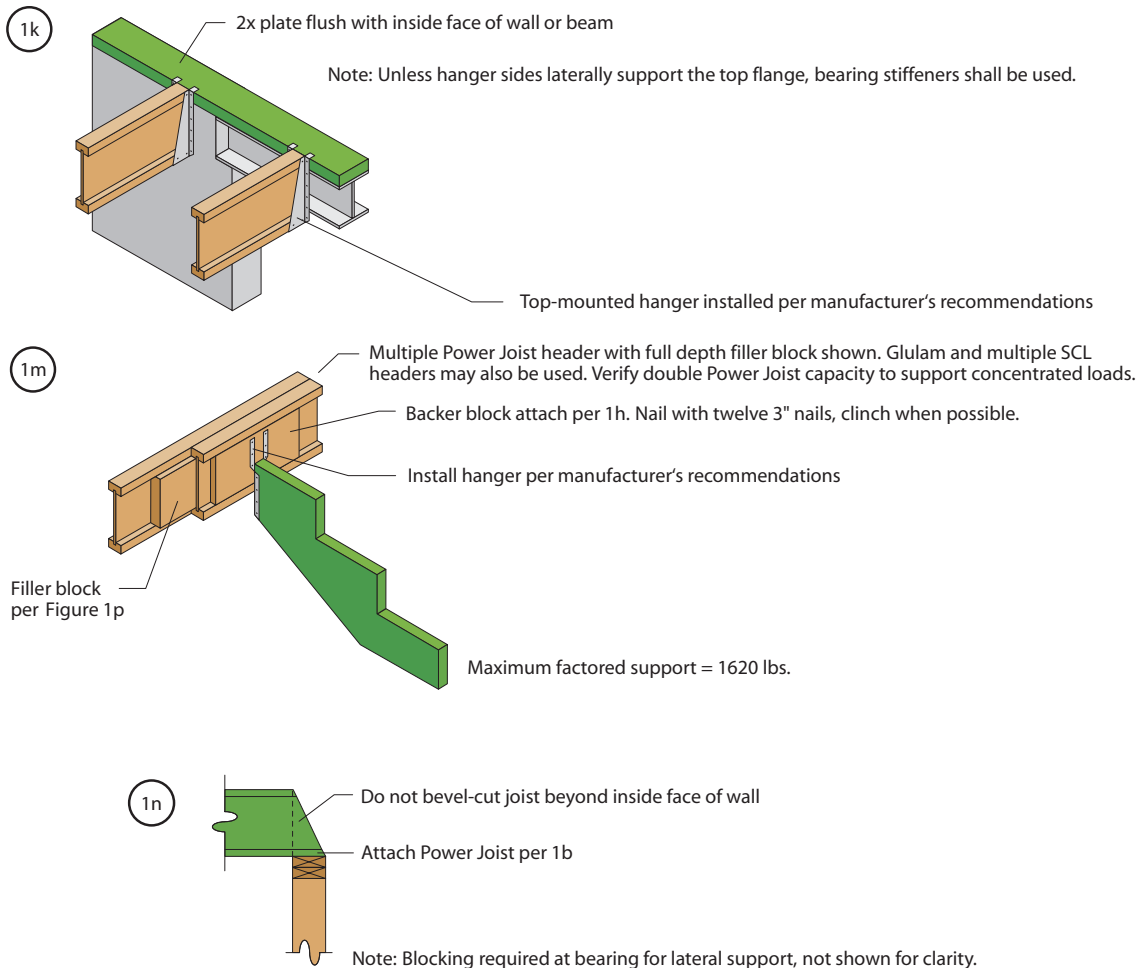


Figure 1 Continued

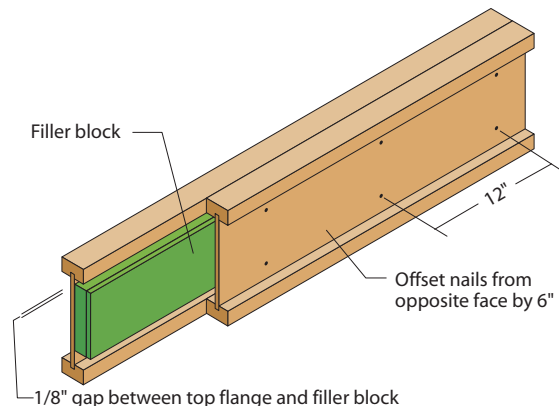
Typical ADI Power Joist® Floor Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



1p FILLER BLOCK REQUIREMENTS FOR DOUBLE POWER JOIST CONSTRUCTION

Flange Width	Net Depth	Filler Block Size
2-1/2"	9-1/2"	2-1/8" x 6"
	11-7/8"	2-1/8" x 8"
	14"	2-1/8" x 10"
	16"	2-1/8" x 12"
3-1/2"	11-7/8"	3" x 8"
	14"	3" x 10"
	16"	3" x 12"
3-1/2"	18"	3" x 14"
	20"	3" x 16"
	22"	3" x 18"
	24"	3" x 20"



Notes:

1. Support back of Power Joist web during nailing to prevent damage to web/flange connection.
2. Leave a 1/8-inch gap between top of filler block and bottom of top Power Joist flange.
3. Filler block is required between joists for full length of span.
4. Nail joists together with two rows of 3" nails at 12 inches o.c. (clinch when possible) on each side of the double Power Joist. Total of 4 nails per foot required. If nails can be clinched, only 2 nails per foot are required.
5. The maximum factored load that may be applied to one side of the double joist using this detail is 860 lbf/ft.

Source: APA

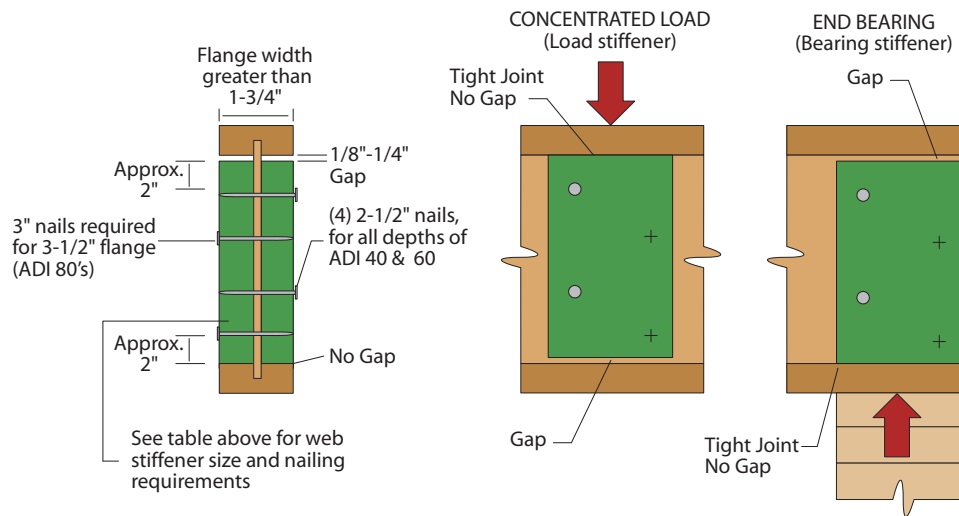
Web Stiffener Requirements

Minimum nailing requirements for web stiffeners.

Stiffener Size and Nailing Requirements		
Joist Depth	2-1/2" Wide Flange	3-1/2" Wide Flange
	8d (2-1/2") nails	10d (3") nails
9.5"	4	-
11.875"	4	4
14"	4	4
16"	4	4
18"	-	6
20"	-	6
22"	-	8
24"	-	8
Minimum Stiffener Size	1" x 2-5/16" (width)	1-1/2" x 2-5/16" (width)

Figure 2

Web Stiffener Installation Details



Cantilever Details for Balconies – (No Wall Load)

Figure 3

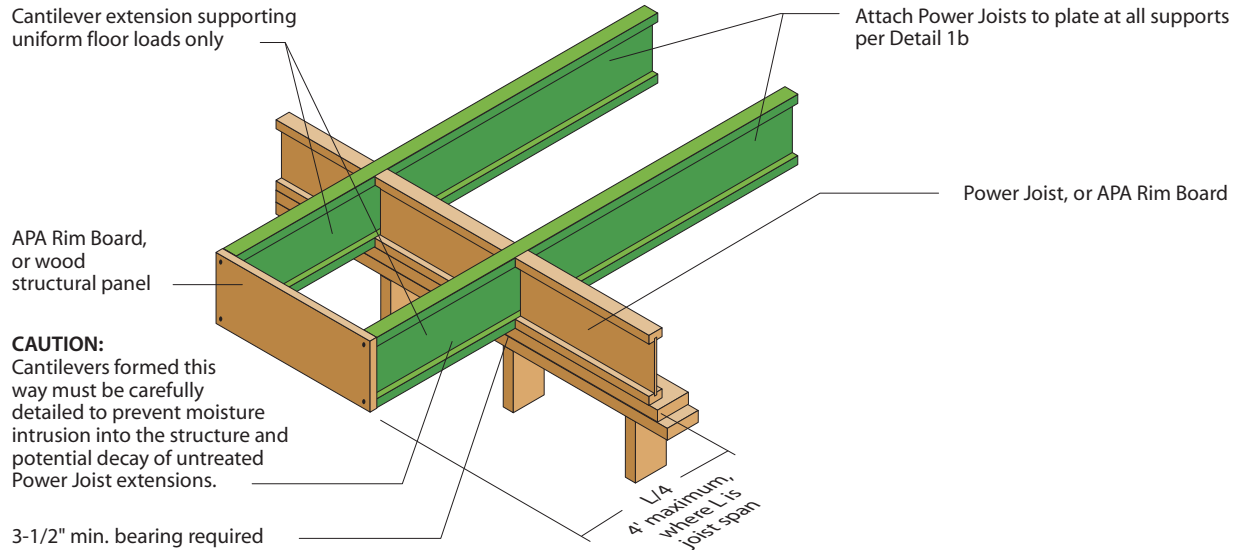
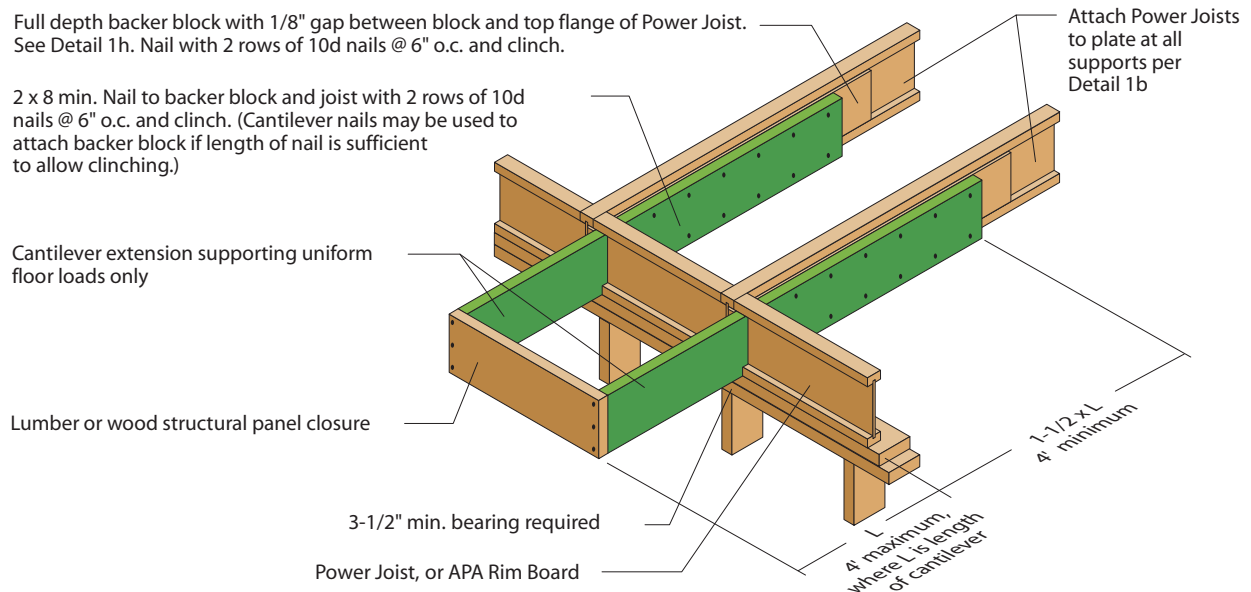


Figure 4

Lumber Cantilever Detail For Balconies

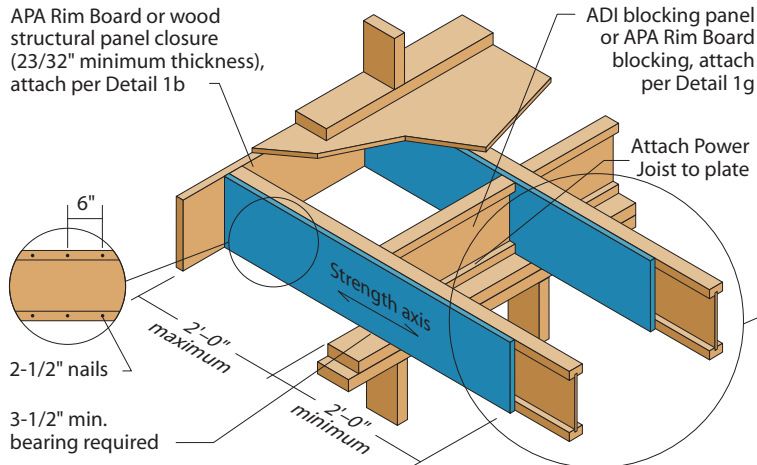


Cantilever Detail for Vertical Building Offset – (Concentrated Wall Load)

Figure 5a

Method 1

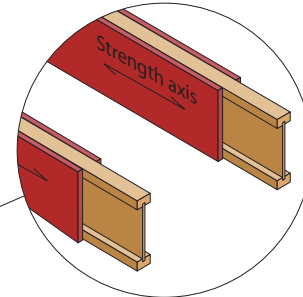
SHEATHING REINFORCEMENT ONE SIDE



Method 2

SHEATHING REINFORCEMENT TWO SIDES

Use same installation as Method 1 but reinforce both sides of Power Joist with sheathing or APA Rim Board.

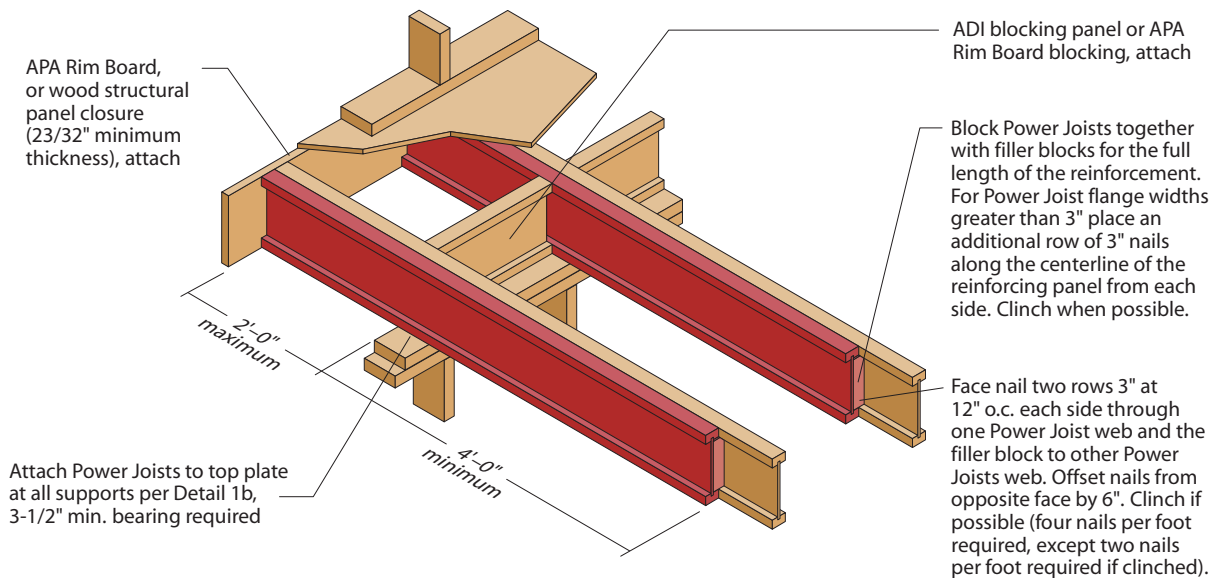


Use nailing pattern shown for Method 1 with opposite face nailing offset by 3"

Note: APA RATED SHEATHING 48/24 (minimum thickness 23/32") required on sides of joist. Depth shall match the full height of the joist. Nail with 2-1/2" nails at 6" o.c., top and bottom flange. Install with face grain horizontal. Attach Power Joist to plate at all supports per Detail 1b

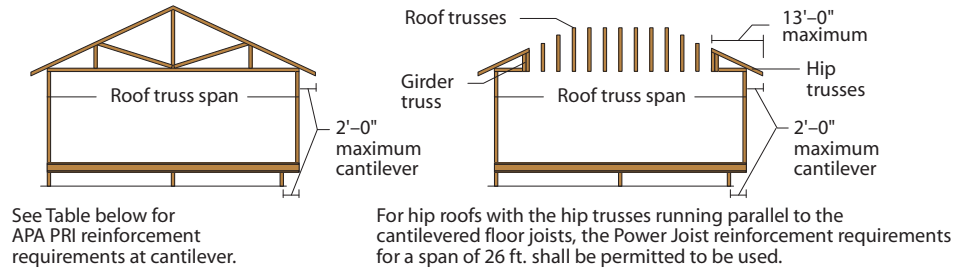
Alternate Method 2

DOUBLE POWER JOISTS



Cantilever Detail for Vertical Building Offset – (Concentrated Wall Load)

Figure 5b



Source: APA

Cantilever Reinforcement Methods

Table 6
ADI Cantilever Reinforcement Methods Allowed

Joist Depth (in.)	Roof Truss Span (ft)	ROOF LOADINGS											
		TL = 35 psf LL not to exceed 20 psf Joist Spacing (in.)				TL = 45 psf LL not to exceed 30 psf Joist Spacing (in.)				TL = 55 psf LL not to exceed 40 psf Joist Spacing (in.)			
		12	16	19.2	24	12	16	19.2	24	12	16	19.2	24
9-1/2	26	N	N	N	1,2	N	N	1,2	2	N	1,2	2	X
	28	N	N	1,2	1,2	N	N	1,2	2	N	1,2	2	X
	30	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	X
	32	N	N	1,2	2	N	1,2	1,2	X	N	1,2	2	X
	34	N	N	1,2	2	N	1,2	2	X	N	2	X	X
11-7/8	36	N	N	1,2	2	N	1,2	2	X	N	2	X	X
	26	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
	28	N	N	1,2	1,2	N	1,2	1,2	1,2	N	1,2	1,2	2
	30	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	1,2	2
	32	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	1,2	2
	34	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	2
14	36	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	2
	38	N	1,2	1,2	2	N	1,2	1,2	2	1,2	1,2	2	X
	26	N	N	N	1,2	N	N	N	1,2	N	N	1,2	1,2
	28	N	N	N	1,2	N	N	1,2	1,2	N	N	1,2	2
	30	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
	32	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
16	34	N	N	N	1,2	N	N	1,2	2	N	1,2	1,2	2
	36	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	1,2	2
	38	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	1,2	2
	40	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	2
	26	N	N	N	1,2	N	N	1,2	1,2	N	N	1,2	1,2
	28	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
	30	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
	32	N	N	N	1,2	N	N	1,2	1,2	N	1,2	1,2	2
16	34	N	N	1,2	1,2	N	N	1,2	2	N	1,2	1,2	2
	36	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	1,2	2
	38	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	2
	40	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	2
	42	N	N	1,2	1,2	N	1,2	1,2	2	N	1,2	2	X

Notes

- (1) N = No reinforcement required.
1 = ADIs reinforced with 23/32" wood structural panel on one side only.
2 = ADIs reinforced with 23/32" wood structural panel on both sides or double Power Joist.
X = Try a deeper joist or closer spacing.
- (2) Color coding in Table is matched to details in Figure 5a.
- (3) Maximum load shall be: 15 psf roof dead load, 50 psf floor total load, and 80 plf wall load. Wall load is based on 3'-0" maximum width window or door openings. For larger openings, or multiple 3'-0" width openings spaced less than 6'-0" o.c., additional joists beneath the opening's cripple studs may be required.
- (4) Table applies to joists 12" to 24" o.c. Use 12" o.c. requirements for lesser spacings.
- (5) For conventional roof construction using a ridge beam, the Roof Truss Span column above is equivalent to the distance between the supporting wall and the ridge beam. When the roof is framed using a ridge board, the Roof Truss Span is equivalent to the distance between the supporting walls as if a truss is used.
- (6) Cantilevered joists supporting girder trusses or roof beams may require additional reinforcing.

Typical Floor Framing Installation Notes

1. Installation of ADI Power Joist shall be in accordance with Figure 1.
2. Except for cutting joist to length, Power Joist flanges should never be cut, drilled, or notched.
3. Concentrated loads should only be applied to the top surface of the top flange. At no time should concentrated loads be suspended from the bottom flange with the exception of light loads such as ceiling fans, light fixtures, etc.
4. Power Joists must be protected from the weather prior to installation.
5. Power Joists must not be used in applications where they will be permanently exposed to weather, or will reach a moisture content greater than 16% such as in swimming pool or hot tub areas. They must not be installed where they will remain in direct contact with concrete or masonry.
6. End-bearing length must be at least 1-3/4". For multiple span joists, intermediate bearing length must be at least 3-1/2".
7. Ends of floor joists shall be restrained to prevent rollover. Use Certified Rim Board or Power Joist blocking panels.
8. Power Joists installed beneath bearing walls perpendicular to the joists require full depth blocking panels, Certified Rim Board, or squash blocks (cripple blocks) to transfer gravity loads from above the floor system to the wall or foundation below (see note 1g page 10).
9. For Power Joists up to 18" deep installed as rim board directly beneath bearing walls parallel to the joists, the maximum factored vertical load using a single Power Joist is 3300 plf, and 6600 plf if double Power Joists are used. Full bearing is required under Power Joist used as rim board.
10. Continuous lateral support of the Power Joist's compression flange is required to prevent rotation and buckling. In simple span uses, lateral support of the top flange is normally supplied by the floor sheathing. In multiple span or cantilever applications, bracing of the Power Joist's bottom flange is also required at interior supports of multiple-span joists, and at the end support next to the cantilever extension. The ends of all cantilever extensions must be laterally braced as shown in Figure 3 or 4.
11. Nails installed perpendicular to the wide face of the flange shall be spaced in accordance with the applicable building code requirements or approved building plans but should not be closer than 2" o.c. per row.
12. Figure 1 details show only Power Joist-specific fastener requirements. For other fastener requirements, see the applicable building code.
13. For Fire-Resistance ratings, typical Sound Transmission Class (STC), and typical Impact Insulation Class (IIC) refer to: National Building Code of Canada 2005 Table A-9.10.3.1.B. assembly numbers F3 to F21.

Web Hole Rules and Specifications

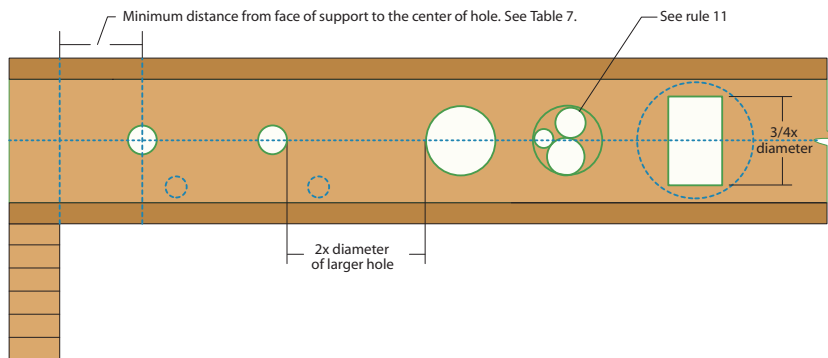
One of the benefits of using I-joists in residential floor construction is that holes may be cut in the joist webs to accommodate electrical wiring, plumbing lines and other mechanical systems, therefore minimizing the depth of the floor system.

Rules for cutting holes in ADI Joists

1. The distance between the inside edge of the support and the centerline of any hole shall be in compliance with the requirements of Table 7.
2. I-joist top and bottom flanges must NEVER be cut, notched, or otherwise modified.
3. Whenever possible field-cut holes should be centered on the middle of the web.
4. The maximum size hole that can be cut into an I-joist web shall equal the clear distance between the flanges of the I-joist minus 1/4 inch. A minimum of 1/8 inch should always be maintained between the top or bottom of the hole and the adjacent I-joist flange.
5. The sides of square holes or longest sides of rectangular holes should not exceed three fourths of the diameter of the maximum round hole permitted at that location.
6. Where more than one hole is necessary, the distance between adjacent hole edges shall exceed twice the diameter of the largest round hole or twice the size of the largest square hole (or twice the length of the longest side of the longest rectangular hole) and each hole must be sized and located in compliance with the requirements of Table 7.
7. Holes measuring 1-1/2 inches shall be permitted anywhere in a cantilevered section of a ADI Joist. Holes of greater size may be permitted subject to verification.
8. A 1-1/2-inch hole can be placed anywhere in the web provided that it meets the requirements of Rule number 6 above.
9. All holes shall be cut in a workman-like manner in accordance with the restrictions listed above and as illustrated in Figure 6.
10. Limit 3 maximum size holes per span.
11. A group of round holes at approximately the same location shall be permitted if they meet the requirements for a single round hole circumscribed around them.

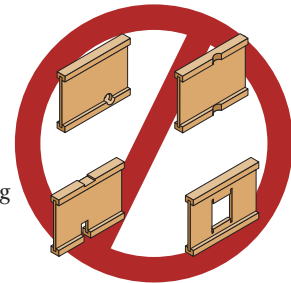
Figure 6

ADI Joist Typical Holes



Cutting the Holes

- Never drill, cut or notch the flange, or over-cut the web.
- Holes in webs should be cut with a sharp saw.
- For rectangular holes, avoid over cutting the corners, as this can cause unnecessary stress concentrations. Slightly rounding the corners is recommended. Starting the rectangular hole by drilling a 1" diameter hole in each of the 4 corners and then making the cuts between the holes is another good method to minimize damage to I-joist.



Web Hole Rules and Specifications Continued

Table 7

Location Of Circular Holes In ADI Joist Webs

Simple or Multiple Span for Dead Loads up to 15 psf and Live Loads up to 40 psf⁽¹⁾⁽²⁾⁽³⁾⁽⁴⁾

Joist Depth	Joist	Minimum Distance from Inside Face of Any Support to Center of Hole (ft.-in.)															
		Round Hole Diameter (in.)															
		SAF ⁽⁵⁾	2	3	4	5	6	6 1/4	7	8	8 5/8	9	10	10 3/4	11	12	12 3/4
9 1/2"	ADI-40	14'-3"	0'-8"	1'-10"	3'-2"	4'-6"	5'-11"	6'-4"									
	ADI-60	14'-9"	1'-5"	2'-8"	4'-0"	5'-5"	6'-11"	7'-3"									
117/8"	ADI-40	16'-0"	0'-7"	0'-8"	1'-5"	2'-8"	4'-0"	4'-4"	5'-5"	6'-11"	7'-11"						
	ADI-60	16'-6"	0'-7"	0'-10"	2'-1"	3'-5"	4'-9"	5'-1"	6'-2"	7'-8"	8'-8"						
	ADI-80	17'-5"	0'-7"	1'-8"	2'-11"	4'-3"	5'-7"	5'-11"	7'-0"	8'-7"	9'-8"						
14"	ADI-40	17'-5"	0'-7"	0'-8"	0'-8"	0'-11"	2'-2"	2'-6"	3'-6"	4'-10"	5'-9"	6'-3"	7'-10"	9'-1"			
	ADI-60	17'-11"	0'-7"	0'-8"	0'-8"	1'-9"	3'-0"	3'-4"	4'-4"	5'-9"	6'-8"	7'-3"	8'-10"	10'-1"			
	ADI-80	19'-2"	0'-7"	0'-8"	1'-4"	2'-7"	3'-11"	4'-3"	5'-4"	6'-9"	7'-8"	8'-3"	9'-10"	11'-2"			
16"	ADI-40	18'-9"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	1'-9"	3'-0"	3'-10"	4'-4"	5'-9"	6'-10"	7'-3"	8'-10"	10'-1"
	ADI-60	19'-6"	0'-7"	0'-8"	0'-8"	0'-9"	1'-6"	1'-10"	2'-10"	4'-2"	5'-0"	5'-6"	6'-11"	8'-1"	8'-6"	10'-1"	11'-5"
	ADI-80	20'-10"	0'-7"	0'-8"	0'-8"	1'-3"	2'-6"	2'-10"	3'-10"	5'-2"	6'-0"	6'-7"	8'-0"	9'-2"	9'-7"	11'-3"	12'-7"
18"	ADI-80	22'-5"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	2'-3"	3'-1"	3'-8"	5'-2"	6'-3"	6'-8"	8'-3"	9'-7"
20"	ADI-80	23'-11"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	1'-9"	2'-6"	3'-1"	4'-5"	5'-5"	5'-9"	7'-3"	8'-4"
22"	ADI-80	25'-4"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	1'-3"	2'-0"	2'-5"	3'-9"	4'-8"	5'-0"	6'-4"	7'-4"
24"	ADI-80	26'-9"	0'-7"	0'-8"	0'-8"	0'-9"	0'-9"	0'-10"	0'-10"	0'-10"	1'-7"	2'-0"	3'-2"	4'-1"	4'-4"	5'-7"	6'-6"

Notes

- (1) Above tables may be used for I-joist spacing of 24 inches on center or less.
- (2) Hole location distance is measured from inside face of supports to center of hole.
- (3) Distances in this chart are based on uniformly loaded joists.
- (4) Hole sizes and/or locations that fall outside of the scope of this table may be acceptable based on analysis of actual hole size, span, spacing and loading conditions.
- (5) SAF = Span Adjustment Factor, used as defined below:

OPTIONAL:

Table 7 is based on the I-joists being used at their maximum span. If the I-joists are placed at less than their full allowable span, the maximum distance from the centerline of the hole to the face of any support (D) as given above may be reduced as follows:

$$D_{\text{reduced}} = \frac{L_{\text{actual}}}{\text{SAF}} \times D$$

Where: D_{reduced} = Distance from the inside face of any support to center of hole, reduced for less-than-maximum span applications (ft). The reduced distance shall not be less than 6 inches from the face of support to edge of the hole.

L_{actual} = The actual measured span distance between the inside faces of supports (ft).

SAF = Span Adjustment Factor given in the table above.

D = The minimum distance from the inside face of any support to center of hole from Table 7 above.

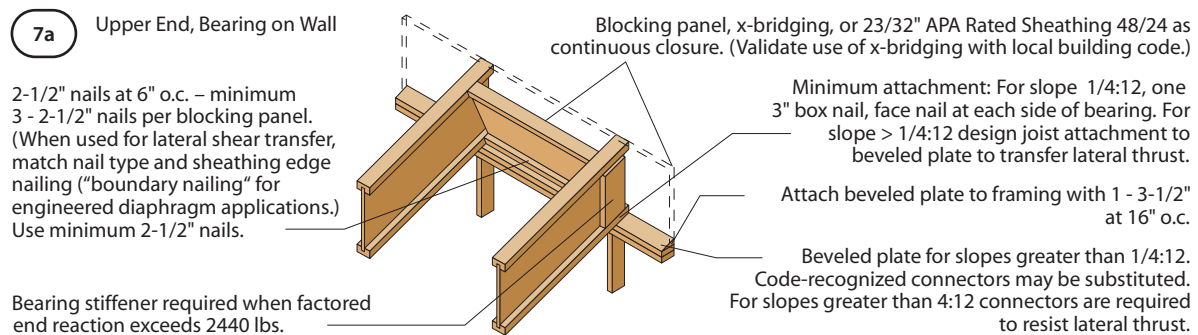
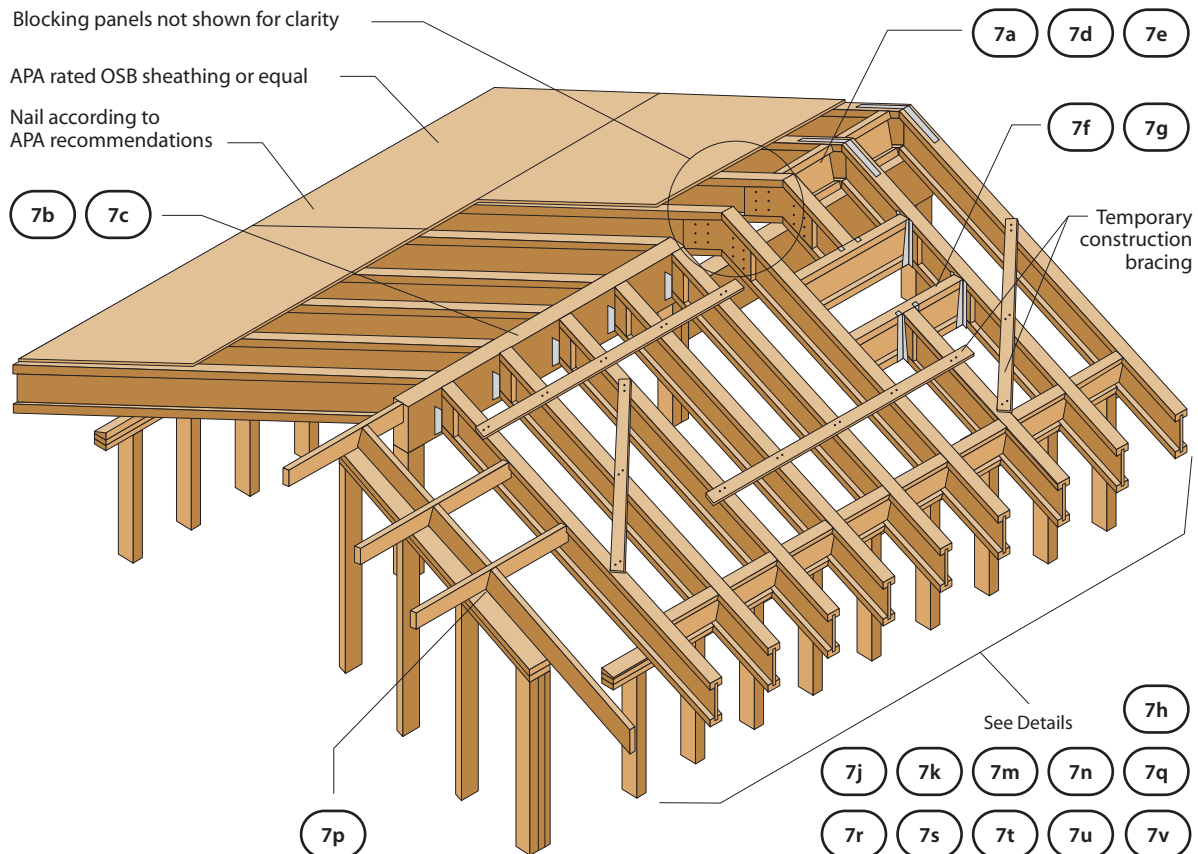
If $\frac{L_{\text{actual}}}{\text{SAF}}$ is greater than 1, use 1 in the above calculation for $\frac{L_{\text{actual}}}{\text{SAF}}$.

Roof Framing and Construction Details

Figure 7

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



Note: Additional connection may be required for wind uplift.

Figure 7 Continued

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.

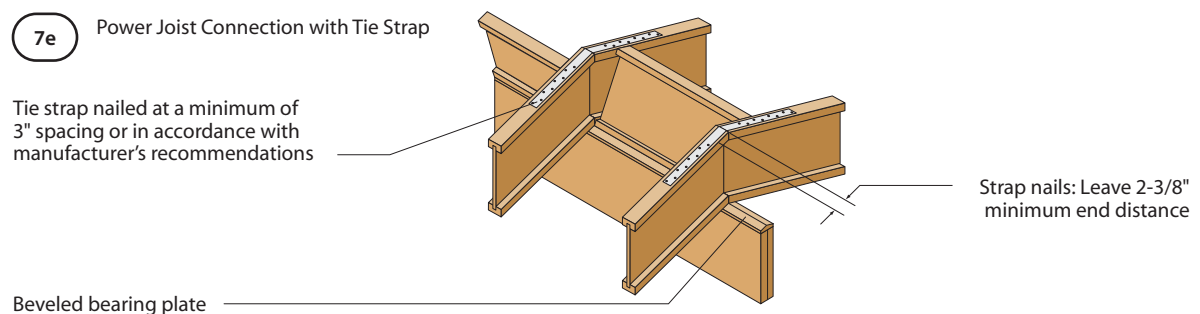
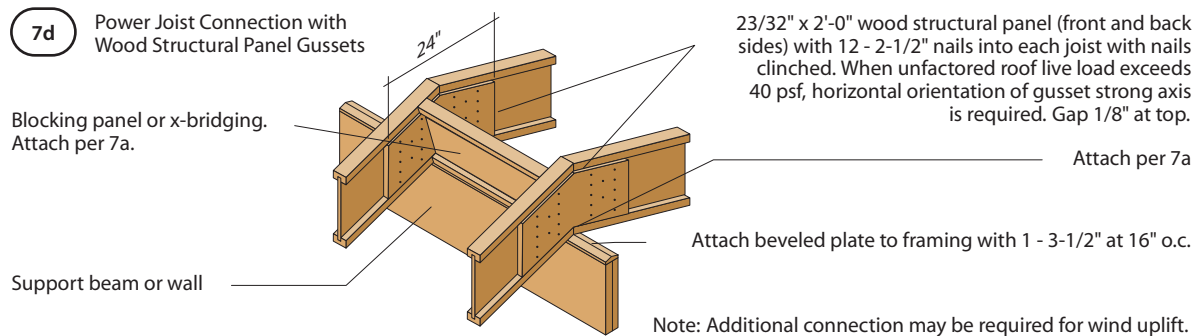
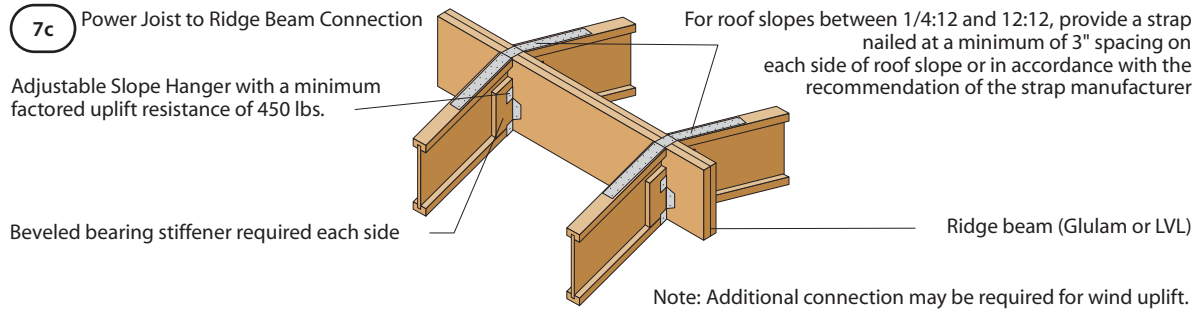
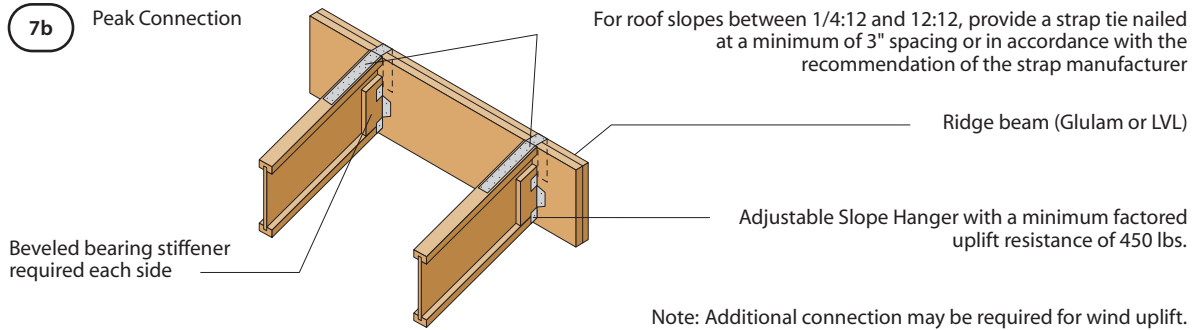


Figure 7 Continued

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.

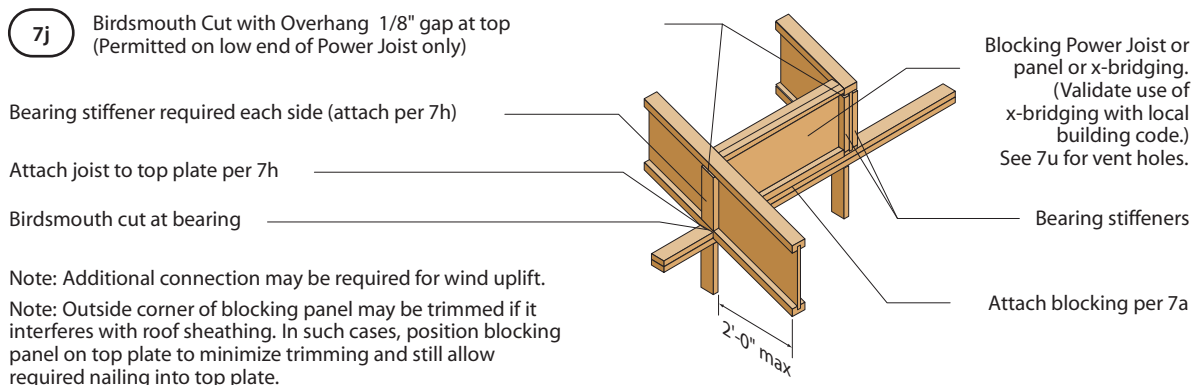
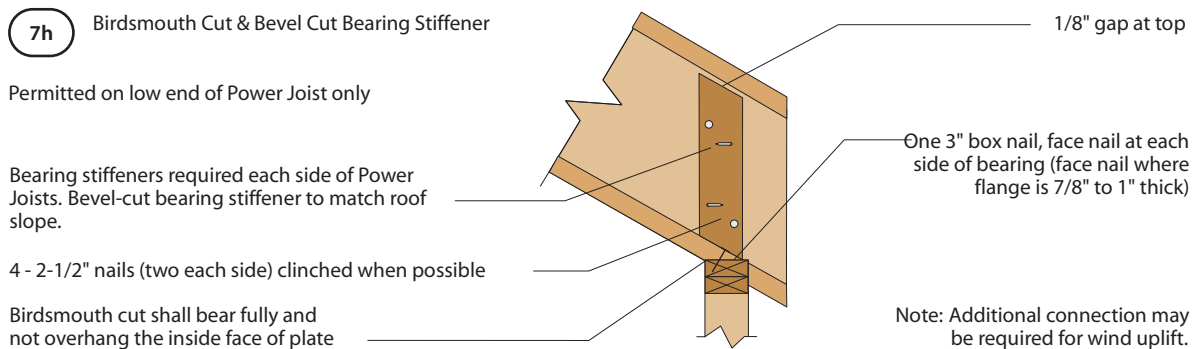
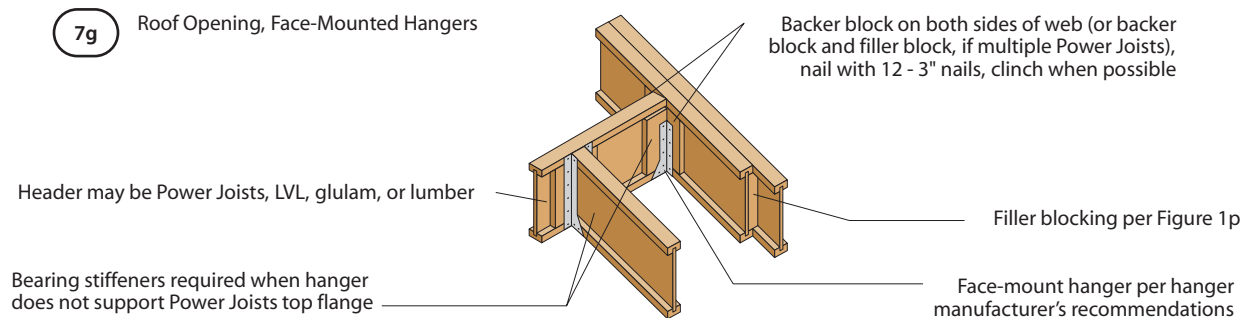
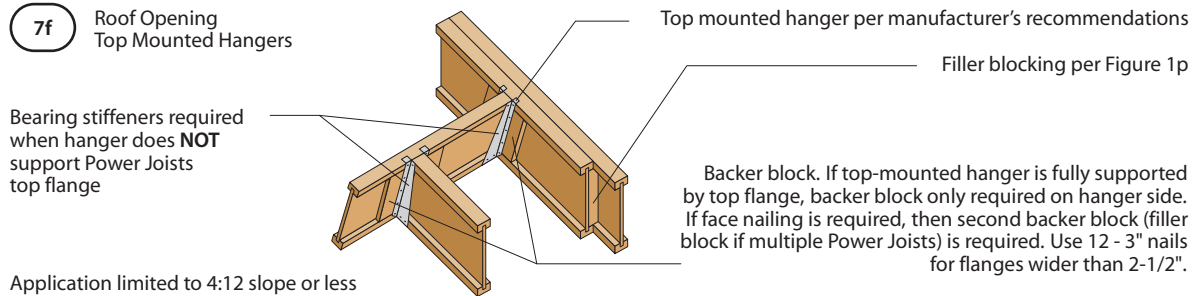
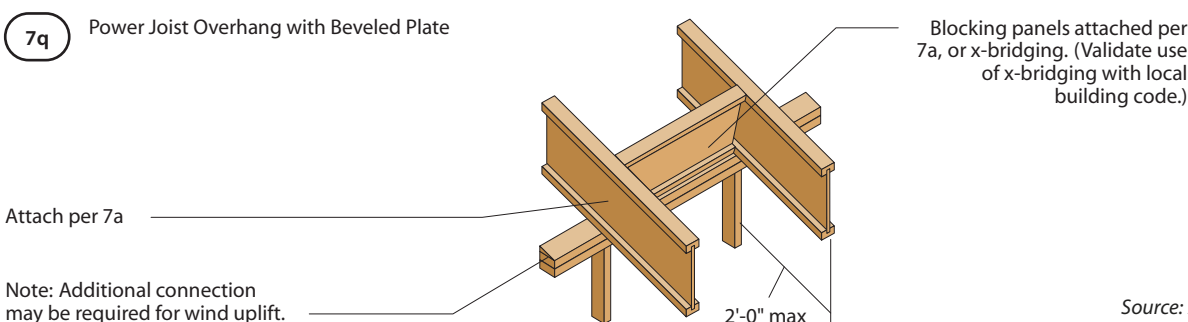
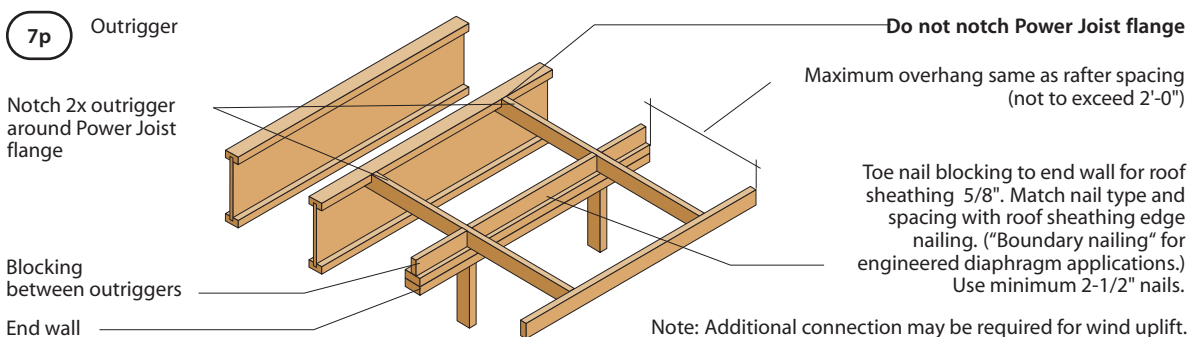
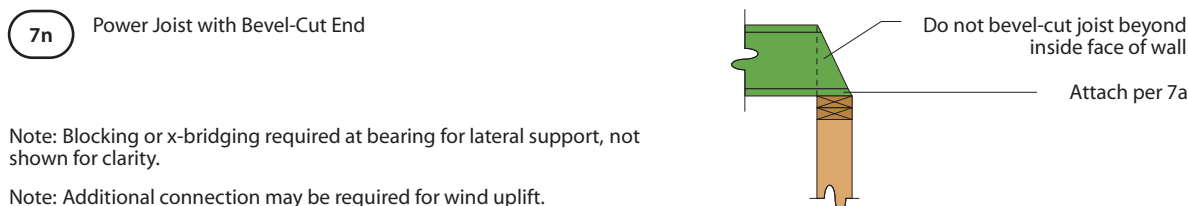
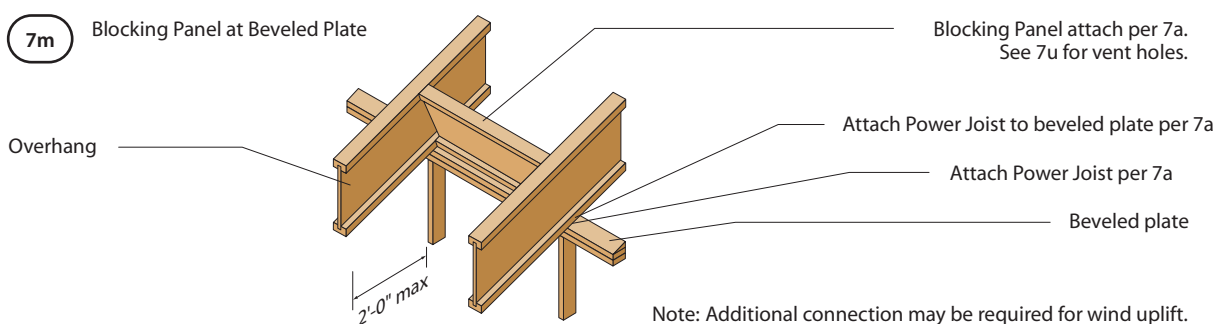
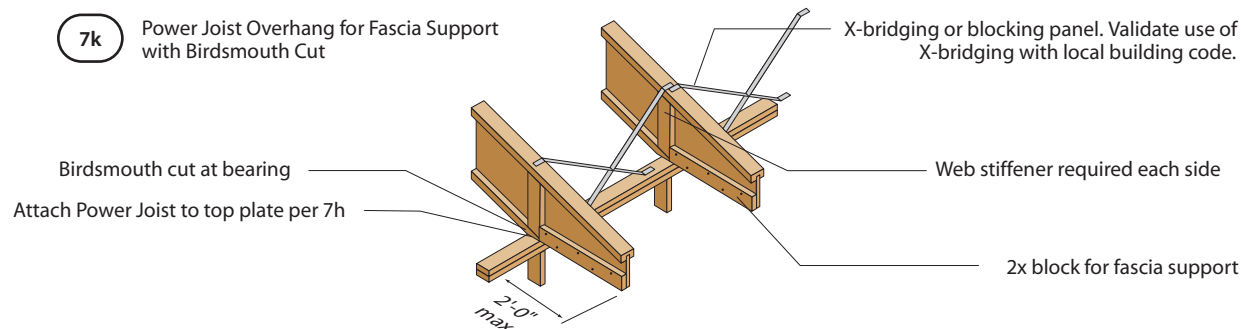


Figure 7 Continued

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.

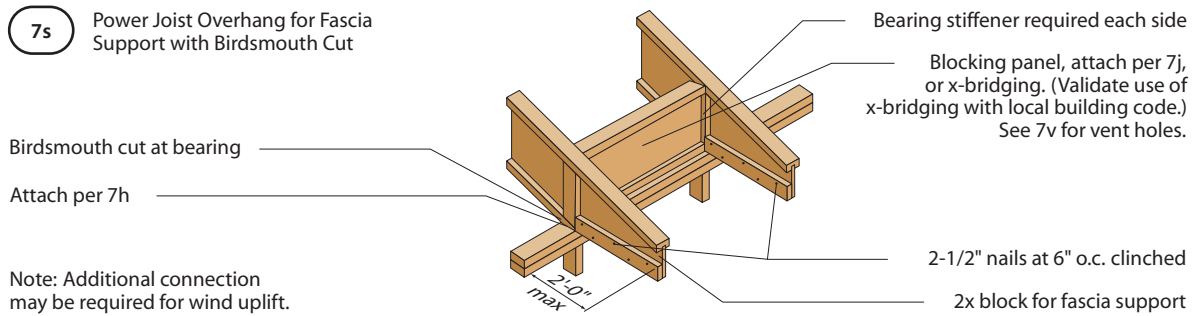
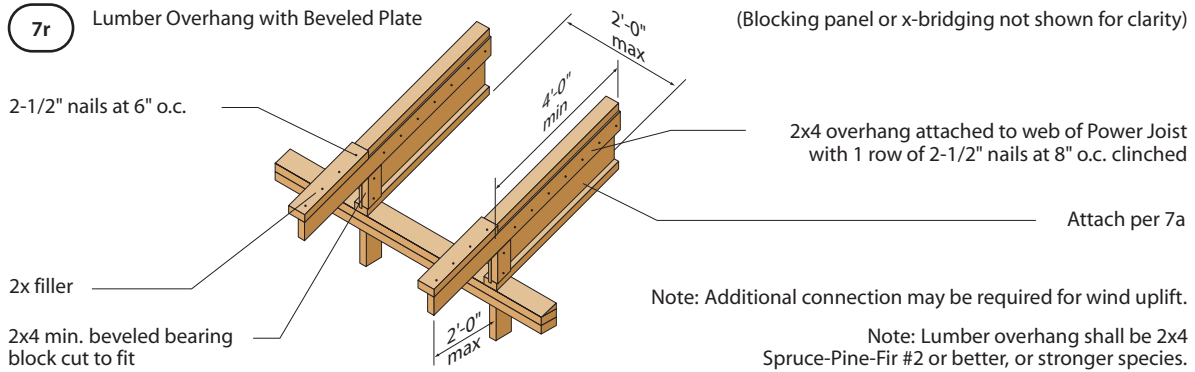


Source: APA

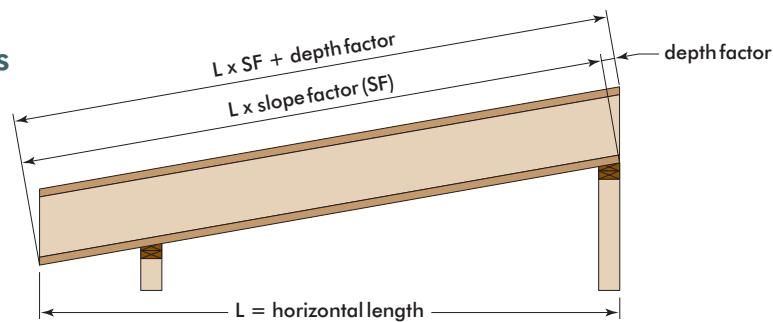
Figure 7 Continued

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



Slope Spans for Roofs



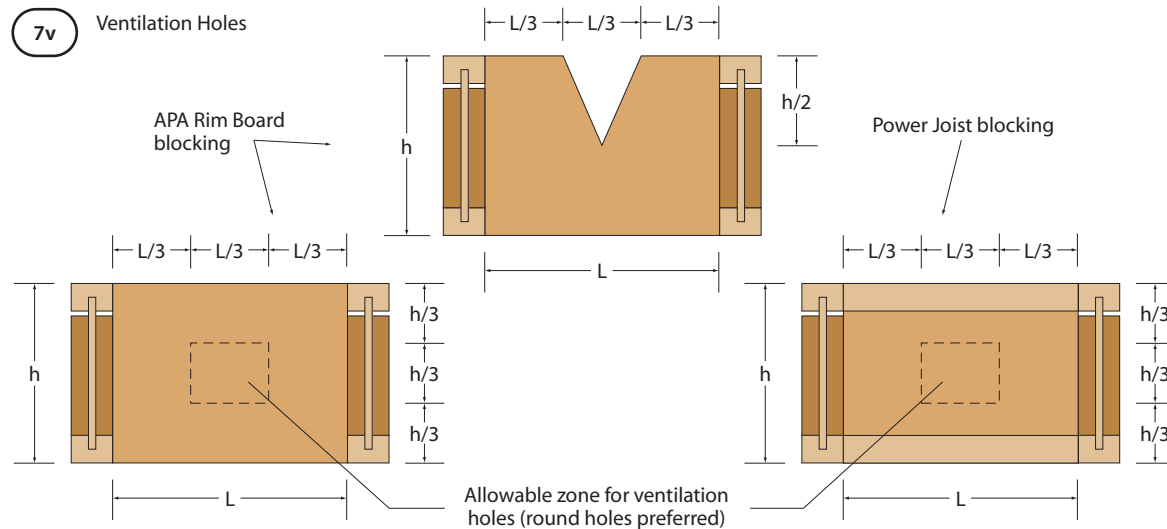
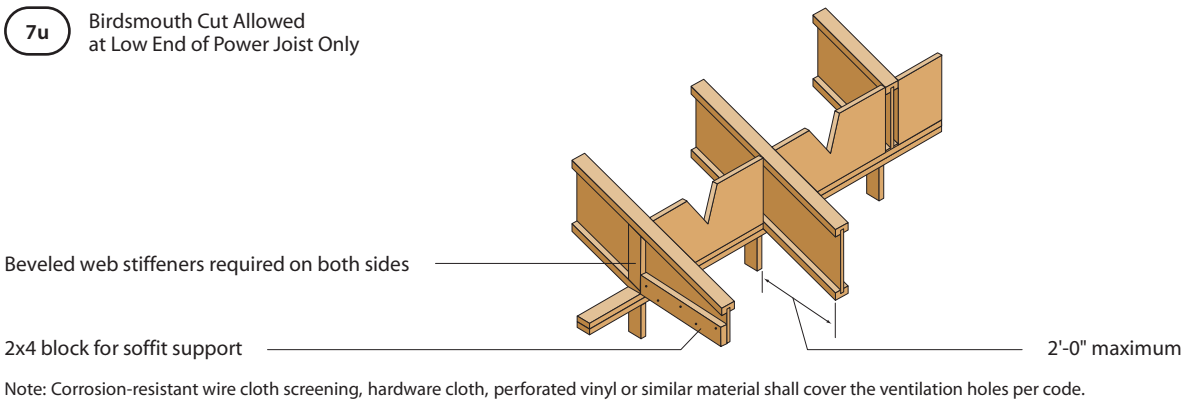
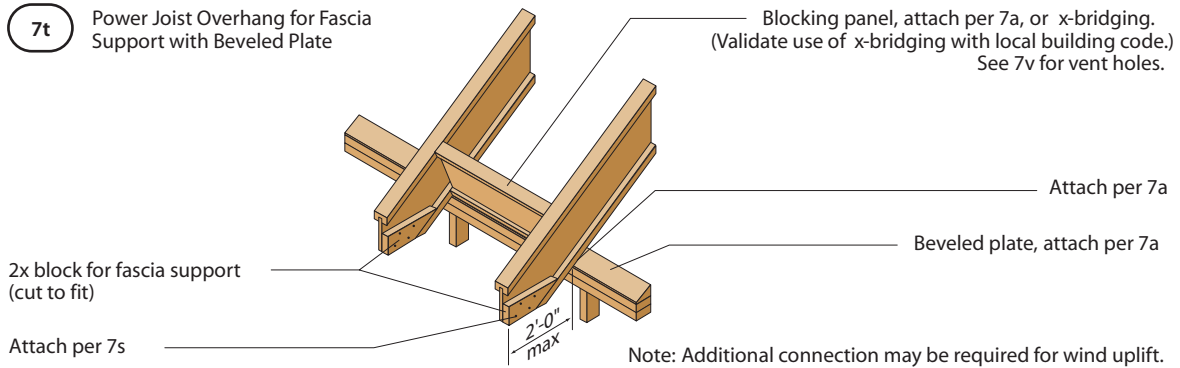
Slope Factor and Depth Factor Table

Slope	2.5:12	3:12	3.5:12	4:12	4.5:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12	
Slope Factor	1.021	1.031	1.042	1.054	1.068	1.083	1.118	1.158	1.202	1.250	1.302	1.357	1.414	
Depth Factor	9-1/2"	2"	2-3/8"	2-7/8"	3-1/4"	3-5/8"	4"	4-3/4"	5-5/8"	6-3/8"	7-1/4"	8"	8-3/4"	9-1/2"
	11-7/8"	2-1/2"	3"	3-1/2"	4"	4-1/2"	5"	6"	7"	8"	9"	10"	11"	11-7/8"
	14"	3"	3-1/2"	4-1/8"	4-3/4"	5-1/4"	5-7/8"	7"	8-1/4"	9-3/8"	10-1/2"	11-3/4"	12-7/8"	14"
	16"	3-3/8"	4"	4-3/4"	5-3/8"	6"	6-3/4"	8"	9-3/8"	10-3/4"	12"	13-3/8"	14-3/4"	16"
	18"	3-3/4"	4-1/2"	5-1/4"	6"	6-3/4"	7-1/2"	9"	10-1/2"	12"	13-1/2"	15"	16-1/2"	18"
	20"	4-1/4"	5"	5-7/8"	6-3/4"	7-1/2"	8-3/8"	10"	11-3/4"	13-3/8"	15"	16-3/4"	18-3/8"	20"
	22"	4-5/8"	5-1/2"	6-1/2"	7-3/8"	8-1/4"	9-1/4"	11"	12-7/8"	14-3/4"	16-1/2"	18-3/8"	20-1/4"	22"
	24"	5"	6"	7"	8"	9"	10"	12"	14"	16"	18"	20"	22"	24"

Figure 7 Continued

Typical Power Joist Roof Framing and Construction Details

All nails shown in the details above are assumed to be common nails unless otherwise noted. Framing lumber assumed to be Spruce-Pine-Fir. Individual components not shown to scale for clarity.



Allowable Roof Spans – Simple Spans

Table 8										
Simple Span Live Load = 20 psf Dead Load = 15 psf										
Series	Depth	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
ADI 40	9 1/2	21'-2"	19'-11"	18'-5"	20'-4"	19'-1"	17'-8"	19'-1"	17'-11"	16'-7"
	11 7/8	25'-5"	23'-10"	21'-7"	24'-4"	22'-10"	21'-0"	22'-10"	21'-6"	19'-11"
	14	28'-10"	26'-6"	23'-8"	27'-8"	25'-10"	23'-1"	26'-0"	24'-5"	22'-3"
	16	31'-4"	28'-7"	25'-6"	30'-6"	27'-10"	24'-10"	28'-10"	26'-10"	23'-11"
ADI 60	9 1/2	22'-6"	21'-1"	19'-6"	21'-7"	20'-3"	18'-9"	20'-3"	19'-0"	17'-7"
	11 7/8	27'-0"	25'-4"	23'-5"	25'-10"	24'-4"	22'-6"	24'-4"	22'-10"	21'-2"
	14	30'-9"	28'-10"	26'-9"	29'-6"	27'-8"	25'-8"	27'-8"	26'-0"	24'-1"
	16	34'-2"	32'-1"	29'-8"	32'-9"	30'-9"	28'-6"	30'-9"	28'-11"	26'-9"
ADI 80	11 7/8	30'-0"	28'-2"	26'-1"	28'-10"	27'-0"	25'-0"	27'-1"	25'-5"	23'-6"
	14	34'-2"	32'-1"	29'-8"	32'-9"	30'-9"	28'-6"	30'-9"	28'-11"	26'-9"
	16	37'-11"	35'-7"	32'-11"	36'-4"	34'-2"	31'-7"	34'-2"	32'-1"	29'-8"
	18	41'-4"	38'-10"	35'-11"	39'-7"	37'-3"	34'-6"	37'-3"	35'-0"	32'-5"
	20	44'-9"	42'-0"	38'-11"	42'-11"	40'-4"	37'-4"	40'-4"	37'-10"	35'-1"
	22	48'-1"	45'-1"	41'-9"	46'-1"	43'-3"	40'-1"	43'-3"	40'-8"	37'-8"
	24	51'-3"	48'-2"	43'-10"	49'-2"	46'-2"	42'-8"	46'-2"	43'-5"	40'-3"

Table 9										
Simple Span Live Load = 30 psf Dead Load = 15 psf										
Series	Depth	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
ADI 40	9 1/2	18'-5"	17'-3"	16'-0"	17'-8"	16'-7"	15'-4"	16'-9"	15'-9"	14'-7"
	11 7/8	22'-1"	20'-9"	18'-11"	21'-2"	19'-11"	18'-5"	20'-1"	18'-11"	17'-6"
	14	25'-1"	23'-3"	20'-9"	24'-1"	22'-7"	20'-4"	22'-10"	21'-5"	19'-9"
	16	27'-5"	25'-0"	22'-4"	26'-9"	24'-6"	21'-11"	25'-4"	23'-10"	21'-3"
ADI 60	9 1/2	19'-6"	18'-4"	16'-11"	18'-9"	17'-7"	16'-3"	17'-10"	16'-9"	15'-6"
	11 7/8	23'-5"	22'-0"	20'-4"	22'-6"	21'-1"	19'-6"	21'-4"	20'-1"	18'-7"
	14	26'-9"	25'-1"	23'-2"	25'-8"	24'-1"	22'-3"	24'-4"	22'-10"	21'-2"
	16	29'-8"	27'-11"	25'-9"	28'-6"	26'-9"	24'-9"	27'-1"	25'-5"	23'-6"
ADI 80	11 7/8	26'-1"	24'-5"	22'-7"	25'-0"	23'-6"	21'-9"	23'-9"	22'-4"	20'-8"
	14	29'-8"	27'-10"	25'-9"	28'-6"	26'-9"	24'-9"	27'-1"	25'-5"	23'-6"
	16	32'-11"	30'-11"	28'-7"	31'-7"	29'-8"	27'-5"	30'-0"	28'-2"	26'-1"
	18	35'-11"	33'-8"	31'-2"	34'-6"	32'-4"	29'-11"	32'-9"	30'-9"	28'-6"
	20	38'-11"	36'-6"	33'-9"	37'-4"	35'-1"	32'-5"	35'-5"	33'-4"	30'-10"
	22	41'-9"	39'-3"	36'-3"	40'-1"	37'-8"	34'-10"	38'-1"	35'-9"	33'-1"
	24	44'-7"	41'-10"	38'-5"	42'-9"	40'-2"	37'-2"	40'-8"	38'-2"	35'-4"

Notes:

- Design is to CSA O86S1-05.
- Spans are for joists supported at each end only (ie no intermediate supports). For other conditions contact the manufacturer.
- Spans listed are clear distances between supports.
- Web stiffeners are not required for joist depths up to 16" (**Depths of 18" or greater require web stiffeners at each support**).
- Use in dry service conditions only.
- Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of the joist.
- Uniform load deflection criteria: L/360 on live load, L/180 on total load, deflection calculated using joist properties only.
- Provide a roof slope of at least 1/4 in 12 for drainage.
- Provide 1-3/4" horizontal bearing at each support, minimum.
- Sloping joists need to be anchored to each support to resist a sliding force of:
 $H_f = (0.5 w_f L y) / (y^2 + 1.44)^{1/2}$
 where H_f = factored force parallel to the joist (lb), w_f = factored horizontally projected loading (plf),
 L = horizontal span (ft), y = roof slope: rise in 12

Allowable Roof Spans—Simple Span

Table 10										
Simple Span Live Load = 40 psf Dead Load = 15 psf										
Series	Depth	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
ADI 40	9 1/2	16'-8"	15'-7"	14'-5"	16'-0"	15'-0"	13'-10"	15'-2"	14'-3"	13'-2"
	11 7/8	20'-0"	18'-9"	17'-0"	19'-2"	18'-0"	16'-8"	18'-2"	17'-1"	15'-10"
	14	22'-8"	20'-11"	18'-8"	21'-9"	20'-5"	18'-4"	20'-8"	19'-5"	17'-11"
	16	24'-8"	22'-6"	20'-2"	24'-2"	22'-2"	19'-9"	23'-0"	21'-7"	19'-4"
ADI 60	9 1/2	17'-8"	16'-7"	15'-4"	17'-0"	15'-11"	14'-8"	16'-1"	15'-1"	14'-0"
	11 7/8	21'-2"	19'-11"	18'-4"	20'-4"	19'-1"	17'-8"	19'-4"	18'-2"	16'-10"
	14	24'-2"	22'-8"	20'-11"	23'-2"	21'-9"	20'-2"	22'-1"	20'-8"	19'-2"
	16	26'-10"	25'-2"	23'-4"	25'-10"	24'-3"	22'-5"	24'-6"	23'-0"	21'-4"
ADI 80	11 7/8	23'-7"	22'-1"	20'-5"	22'-8"	21'-3"	19'-8"	21'-6"	20'-2"	18'-8"
	14	26'-10"	25'-2"	23'-3"	25'-9"	24'-2"	22'-4"	24'-6"	23'-0"	21'-3"
	16	29'-9"	27'-11"	25'-2"	28'-7"	26'-10"	24'-3"	27'-2"	25'-6"	23'-2"
	18	32'-6"	30'-6"	28'-2"	31'-2"	29'-3"	27'-1"	29'-8"	27'-10"	25'-9"
	20	35'-2"	33'-0"	30'-6"	33'-9"	31'-9"	29'-4"	32'-1"	30'-2"	27'-11"
	22	37'-10"	35'-6"	32'-9"	36'-4"	34'-1"	31'-6"	34'-6"	32'-5"	30'-0"
	24	40'-4"	37'-10"	34'-7"	38'-9"	36'-4"	33'-8"	36'-10"	34'-7"	32'-0"

Table 11										
Simple Span Live Load = 50 psf Dead Load = 15 psf										
Series	Depth	Slope of 1/4:12 to 4:12			Slope of 4:12 to 8:12			Slope of 8:12 to 12:12		
		16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc	16" oc	19.2" oc	24" oc
ADI 40	9 1/2	15'-5"	14'-5"	13'-4"	14'-9"	13'-10"	12'-10"	14'-1"	13'-2"	12'-2"
	11 7/8	18'-5"	17'-4"	15'-7"	17'-9"	16'-8"	15'-4"	16'-10"	15'-10"	14'-7"
	14	21'-0"	19'-2"	17'-2"	20'-2"	18'-11"	16'-11"	19'-2"	18'-0"	16'-6"
	16	22'-8"	20'-8"	18'-5"	22'-4"	20'-4"	18'-2"	21'-3"	19'-11"	17'-10"
ADI 60	9 1/2	16'-4"	15'-4"	14'-1"	15'-8"	14'-8"	13'-7"	14'-11"	14'-0"	12'-11"
	11 7/8	19'-7"	18'-4"	16'-11"	18'-10"	17'-8"	16'-4"	17'-11"	16'-10"	15'-6"
	14	22'-4"	20'-11"	19'-4"	21'-6"	20'-2"	18'-7"	20'-5"	19'-2"	17'-9"
	16	24'-10"	23'-4"	19'-10"	23'-10"	22'-5"	19'-3"	22'-8"	21'-4"	18'-6"
ADI 80	11 7/8	21'-9"	20'-5"	18'-10"	20'-11"	19'-8"	18'-2"	19'-11"	18'-8"	17'-3"
	14	24'-10"	23'-3"	21'-2"	23'-10"	22'-4"	20'-6"	22'-8"	21'-3"	19'-8"
	16	27'-6"	25'-10"	21'-2"	26'-5"	24'-10"	20'-6"	25'-2"	23'-7"	19'-9"
	18	30'-0"	28'-2"	26'-0"	28'-10"	27'-1"	25'-0"	27'-5"	25'-9"	23'-10"
	20	32'-6"	30'-6"	28'-2"	31'-3"	29'-4"	27'-1"	29'-9"	27'-11"	25'-10"
	22	35'-0"	32'-9"	30'-3"	33'-7"	31'-6"	29'-2"	31'-11"	30'-0"	27'-9"
	24	37'-4"	35'-0"	31'-8"	35'-10"	33'-8"	31'-1"	34'-1"	32'-0"	29'-7"

Notes:

- Design is to CSA O86S1-05.
- Spans are for joists supported at each end only (ie no intermediate supports). For other conditions contact the manufacturer.
- Spans listed are clear distances between supports.
- Web stiffeners are not required for joist depths up to 16" (**Depths of 18" or greater require web stiffeners at each support**).
- Use in dry service conditions only.
- Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of the joist.
- Uniform load deflection criteria: L/360 on live load, L/180 on total load, deflection calculated using joist properties only.
- Provide a roof slope of at least 1/4 in 12 for drainage.
- Provide 1-3/4" horizontal bearing at each support, minimum.
- Sloping joists need to be anchored to each support to resist a sliding force of:
 $H_f = (0.5 w_f L y) / (y^2 + 1.44)^{1/2}$
 where H_f = factored force parallel to the joist (lb), w_f = factored horizontally projected loading (plf),
 L = horizontal span (ft), y = roof slope: rise in 12

Allowable Roof Uniform Load Capacities

Table 12

Floor ADI Power Joist — ADI 40

Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"				11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240		
8				344				419				419				419
9	299			306				374				374				374
10	227			276				337				337				337
11	176			252	287			308				308				308
12	139	209		231	228			282				282				282
13	112	168		208	184			261	260			261				261
14	91	137		180	151	226		233	214			243				243
15	75	113	150	157	125	187		203	178			227				227
16	62	94	125	138	104	157		179	149			213	199			213
17	52	79	105	122	88	132		159	126	189		191	168			201
18	45	67	90	109	75	112		142	107	161		171	144			190
19	38	57	77	98	64	96		127	92	139		153	124			178
20	33	49	66	89	55	83	111	115	80	120		138	107			161
21	28	43	57	80	48	72	97	104	69	104		126	94	141		146
22	25	37	50	73	42	63	85	95	61	91		115	82	123		133
23	22	33	44	67	37	56	74	87	54	81		105	72	109		122
24	19	29	39	62	33	49	66	80	47	71	95	96	64	96		112
25	17	26	34	57	29	44	58	74	42	63	85	89	57	86		103
26	15	23	31	52	26	39	52	68	37	56	75	82	51	76		95
27	13	20	27	49	23	35	47	63	34	51	68	76	46	69		88
28					21	31	42	59	30	45	61	71	41	62		82
29					19	28	38	55	27	41	55	66	37	56	74	77
30					17	25	34	51	25	37	50	62	33	50	67	72
31					15	23	31	48	22	34	45	58	30	46	61	67
32					14	21	28	45	20	31	41	54	28	42	56	63
33					13	19	26	42	18	28	37	51	25	38	51	59
34					11	17	23	40	17	26	34	48	23	35	47	56

Notes:

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only.
Unfactored live load (either L/360 or L/240), unfactored total load and factored load must be checked.
Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in this table.
9. The loads have been calculated in accordance with CSA O86S1-05.
10. Use the horizontal span from the building plans to size the joists.
For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below.
Provide a roof slope of at least 1/4 in 12 for drainage.

Slope Factor

roof slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707

Allowable Roof Uniform Load Capacities

Table 13

Floor ADI Power Joist — ADI 60

Allowable Uniform Loads (PLF)

Clear Span (ft)	9-1/2"			Factored Total Load	11-7/8"			Factored Total Load	14"			Factored Total Load	16"			Factored Total Load
	Unfactored Loads Based on Deflection		Total		Unfactored Loads Based on Deflection		Total		Unfactored Loads Based on Deflection		Total		Unfactored Loads Based on Deflection		Total	
	Live				Live				Live				Live			
	L/360	L/240			L/360	L/240			L/360	L/240			L/360	L/240		
8				344				419				419				419
9				306				374				374				374
10	263			276				337				337				337
11	205			252				308				308				308
12	163			231	265			282				282				282
13	131	197		213	215			261				261				261
14	107	161		198	177			243				243				243
15	88	133	177	185	146	220		227	209			227				227
16	74	111	148	174	123	184		213	176			213				213
17	62	93	125	164	104	156		201	149			201	199			201
18	53	79	106	151	88	133	177	190	128			190	171			190
19	45	68	91	136	76	114	152	176	110	165		180	147			180
20	39	59	78	123	66	99	132	159	95	143		171	128			171
21	34	51	68	111	57	86	115	144	83	125		163	112			163
22	29	44	59	101	50	75	100	132	73	109	146	156	98	148		156
23	26	39	52	93	44	66	88	120	64	96	129	145	87	130		149
24	23	34	46	85	39	59	78	111	57	85	114	133	77	115		143
25	20	31	41	79	35	52	70	102	50	76	101	123	68	103		137
26	18	27	36	73	31	46	62	94	45	68	91	114	61	92	123	132
27	16	24	33	67	28	42	56	88	40	61	81	105	55	82	110	122
28					25	37	50	81	36	55	73	98	49	74	99	114
29					22	34	45	76	33	49	66	91	45	67	90	106
30					20	30	41	71	30	45	60	85	40	61	81	99
31					18	28	37	66	27	41	54	80	37	55	74	93
32					17	25	34	62	25	37	50	75	33	50	67	87
33					15	23	31	59	22	34	45	71	31	46	62	82
34					14	21	28	55	20	31	41	66	28	42	56	77

Notes:

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only.
Unfactored live load (either L/360 or L/240), unfactored total load and factored load must be checked.
Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in this table.
9. The loads have been calculated in accordance with CSA O86S1-05.
10. Use the horizontal span from the building plans to size the joists.
For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below.
Provide a roof slope of at least 1/4 in 12 for drainage.

Slope Factor

roof slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707

Allowable Roof Uniform Load Capacities

Table 14
Floor ADI Power Joist — ADI 80
Allowable Uniform Loads (PLF)

Clear Span (ft)	11-7/8"				14"				16"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total	
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180	
8				420				459				487
9				375				410				434
10				338				370				392
11				308				337				357
12				283				310				328
13				262				286				303
14	231			243				266				282
15	193			227				249				264
16	163			213	230			234				247
17	138			201	196			220				233
18	118	177		190	168			208				220
19	102	153		180	145			197	193			209
20	88	133		171	126			187	168			199
21	77	116	155	163	111	166		179	147			189
22	68	102	136	156	97	146		171	130			181
23	60	90	120	149	86	129		163	115	173		173
24	53	79	106	143	76	115	153	156	102	153		166
25	47	71	94	137	68	102	136	150	91	137		159
26	42	63	84	132	61	91	122	145	82	123		153
27	38	57	76	124	55	82	110	139	73	110	147	148
28	34	51	68	115	49	74	99	134	66	99	133	142
29	31	46	62	108	44	67	89	130	60	90	120	137
30	28	42	56	101	40	61	81	121	54	82	109	133
31	25	38	51	94	37	55	74	114	49	74	99	129
32	23	34	46	88	33	50	67	107	45	68	91	124
33	21	32	42	83	30	46	61	100	41	62	83	116
34	19	29	39	78	28	42	56	94	38	57	76	110

Notes:

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only.
Unfactored live load (either L/360 or L/240), unfactored total load and factored load must be checked.
Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. Web stiffeners are not required for the joists in this table.
9. The loads have been calculated in accordance with CSA O86S1-05.
10. Use the horizontal span from the building plans to size the joists.
For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below.
Provide a roof slope of at least 1/4 in 12 for drainage.

Slope Factor

roof slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707

Allowable Roof Uniform Load Capacities

Table 15

Floor ADI Power Joist — ADI 80 With Web Stiffeners

Allowable Uniform Loads (PLF)

Clear Span (ft)	18"				20"				22"				24"			
	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load	Unfactored Loads Based on Deflection			Factored Total Load
	Live		Total		Live		Total		Live		Total		Live		Total	
	L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180		L/360	L/240	L/180	
12				405				405				405				405
13				375				375				375				375
14				348				348				348				348
15				326				326				326				326
16				306				306				306				306
17				288				288				288				288
18				272				272				272				272
19	244			258				258				258				258
20	213			245				245				245				245
21	187			234	232			234				234				234
22	165			223	205			223				223				223
23	146			214	182			214				214				214
24	130	195		205	162			205	197			205				205
25	116	175		197	145			197	177			197				197
26	104	157		189	130			189	159			189				189
27	94	141		182	117	176		182	143			182	172			182
28	85	127	170	176	106	159		176	130			176	155			176
29	77	115	154	170	96	144		170	118			170	141			170
30	70	105	140	160	87	131		164	107	161		164	129			164
31	63	95	127	150	80	120		159	98	147		159	117			159
32	58	87	116	140	73	109	146	154	89	134		154	107			154
33	53	80	107	132	67	100	134	146	82	123		149	98	148		149
34	49	73	98	124	61	92	123	138	75	113		145	91	136		145
35	45	67	90	117	56	85	113	130	69	104	139	141	83	125		141
36	41	62	83	111	52	78	104	123	64	96	128	135	77	116		137
37	38	57	77	105	48	72	97	116	59	89	119	128	71	107		133
38	35	53	71	100	44	67	89	110	55	82	110	121	66	99		130
39	33	49	66	95	41	62	83	105	51	76	102	115	61	92	123	125
40	30	46	61	90	38	58	77	100	47	71	95	109	57	86	114	119
41	28	43	57	86	36	54	72	95	44	66	88	104	53	80	107	113
42	26	40	53	82	33	50	67	90	41	62	82	99	49	74	99	108
43	24	37	49	78	31	47	62	86	38	58	77	95	46	70	93	103
44	23	35	46	74	29	44	58	82	36	54	72	90	43	65	87	98

Notes:

1. Clear span is the distance between the face of the supports.
2. The load values are for standard term load duration and dry service conditions only. The dead load must not exceed the live load.
3. The load values above represent the worst case of simple span or multiple span single member applications.
4. Design of continuous spans is based on the longest span. The shortest span must not be less than 50% of the longest span.
5. Provide continuous lateral support for top flange. Provide lateral support at points of bearing to prevent twisting of joist.
6. The unfactored load columns are based on deflection only. The factored load column is based on strength only.
Unfactored live load (either L/360 or L/240), unfactored total load and factored load must be checked.
Where the unfactored load column is blank, the factored load column governs.
7. Provide 1-3/4" bearing at end supports and 3-1/2" bearing at interior support minimum.
8. **Web stiffeners are required at each support.**
9. The loads have been calculated in accordance with CSA O86S1-05.
10. Use the horizontal span from the building plans to size the joists.
For slopes greater than 1 in 12, multiply the tabulated loads by the appropriate factor listed below.
Provide a roof slope of at least 1/4 in 12 for drainage.

Slope Factor

roof/slope / 12	2	3	4	5	6	7	8	9	10	11	12
unfactored live load	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707
unfactored total load	0.973	0.941	0.900	0.852	0.800	0.746	0.692	0.640	0.590	0.543	0.500
factored loads	0.986	0.970	0.949	0.923	0.894	0.864	0.832	0.800	0.768	0.737	0.707

Power Joist® Design Properties

Table 16

Factored Resistance for ADI Power Joists⁽¹⁾

Series	Depth	EI ⁽²⁾ (10 ⁶ lbf-in. ²)	M _r ⁽³⁾ (lbf-ft)	V _r ⁽⁴⁾ (lbf)	K ⁽⁵⁾ (10 ⁶ lbf)	Self Weight (plf)	Factored Vertical Bearing (lbf/ft)
ADI-40	9-1/2	193	4,549	1,768	4.94	2.6	3300
	11-7/8	330	5,896	2,241	6.18	2.9	3300
	14	482	7,102	2,699	7.28	3.1	3300
	16	657	8,233	3,109	8.32	3.4	3300
ADI-60	9-1/2	231	6,287	1,768	4.94	2.6	3300
	11-7/8	396	8,150	2,241	6.18	2.9	3300
	14	584	9,805	2,699	7.28	3.1	3300
	16	799	11,368	3,109	8.32	3.4	3300
ADI-80	11-7/8	547	11,543	2,241	6.18	3.6	3300
	14	802	13,904	2,699	7.28	3.8	3300
	16	1092	16,116	3,109	8.32	4	3300
	18	1413	18,295	3,867	9.36	4.3	3300
	20	1790	20,258	3,993	10.4	4.5	2850
	22	2214	22,187	4,128	11.44	4.7	2400
	24	2687	24,100	4,254	12.48	4.9	2300

- (1.) The tabulated values are factored resistances for standard duration of load. All values, except EI and K shall be permitted to be adjusted for other load durations as permitted by the code.
- (2.) Bending stiffness (EI) of the Power Joist.
- (3.) Factored Moment resistances of the Power Joist which shall not be increased by any code-allowed repetitive member use factor.
- (4.) Factored Shear resistance (V_r) of the Power Joist.
- (5.) Coefficient of shear deflection (K) of the Power Joist. For calculating uniform load and center-point load deflections of the Power Joist in a simple-span application, use Eqs. 1 and 2.

$$1. \text{ Uniform Load: } \delta = \frac{5\omega\ell^4}{384EI} + \frac{\omega\ell^2}{K}$$

$$2. \text{ Center-Point Load: } \delta = \frac{P\ell^3}{48EI} + \frac{2P\ell}{K}$$

Where: δ = calculated deflection (in)

ℓ = design span (in)

EI = bending stiffness of the Power Joist (lbf-in²)

ω = unfactored uniform load (lbf/in)

P = concentrated load (lbf)

K = coefficient of shear deflection (lbf)

Table 17

Factored Reaction Values for ADI Power Joist ⁽¹⁾

Series	Depth	End Reaction ⁽²⁾ (lbf)				Intermediate Reaction (lbf)			
		1.75" Bearing		4" Bearing		3.5" Bearing		5.5" Bearing	
		Web Stiffeners		Web Stiffeners		Web Stiffeners		Web Stiffeners	
		No	Yes	No	Yes	No	Yes	No	Yes
ADI-40	9-1/2	1,705	1,768	1,768	1,768	4,349	4,577	5,122	5,122
	11-7/8	1,894	2,068	2,241	2,241	4,349	4,806	5,122	5,327
	14	1,894	2,336	2,447	2,699	4,349	5,011	5,122	5,501
	16	1,894	2,589	2,447	3,109	4,349	5,209	5,122	5,674
ADI-60	9-1/2	1,705	1,768	1,768	1,768	4,349	4,577	5,122	5,122
	11-7/8	1,894	2,068	2,241	2,241	4,349	4,806	5,122	5,327
	14	1,894	2,336	2,447	2,699	4,349	5,011	5,122	5,501
	16	1,894	2,589	2,447	3,109	4,349	5,209	5,122	5,674
ADI-80	11-7/8	2,020	2,241	2,241	2,241	4,356	5,209	5,138	5,659
	14	2,020	2,699	2,447	2,699	4,767	5,453	5,422	5,911
	16	2,020	2,912	2,447	3,109	5,154	5,682	5,682	6,156
	18		3,236		3,867	5,051	6,235	5,761	6,866
	20		3,236		3,993	5,051	6,235	5,761	6,866
	22		3,236		4,128	5,051	6,235	5,761	6,866
	24		3,236		4,254	5,051	6,235	5,761	6,866

- (1.) The tabulated values are factored resistances for standard term duration of load. All values shall be permitted to be adjusted for other load durations as permitted by the code.
- (2.) For end reaction values above 2,450 lbf, bearing stiffeners are required.
- Not Allowed

Power Joist® Framing Connectors — Single Power Joists



Table 18

Top Flange							Factored Resistance			Snap-In						Factored Resistance			Face Mount				Factored Resistance		
Joist Height	Model	B Dim	Fastener Type		Uplift (115)	Normal		Model	B Dim	Fastener Type		Uplift (115)	Normal		Model	B Dim	Fastener Type		Uplift (115)	Normal					
			Header	Joist		DF/SP	SPF			Header	Joist		DF/SP	SPF			Header	Joist		DF/SP	SPF				
ADI 40, 60 Joist Width = 2 1/2"																									
9-1/2	LT259	2	6-3"	1-#8x1¼ws¹	100	2560	1725	IUS2.56/9.5	2	8-3"	—	105	2385	1700	LF259	2	10-3"	1-#8x1¼ws¹	100	2525	2155				
11-7/8	LT251188	2	6-3"	1-#8x1¼ws¹	100	2560	1725	IUS2.56/11.88	2	10-3"	—	105	2565	1835	LF2511	2	12-3"	1-#8x1¼ws¹	100	2880	2270				
14	LT2541	2	6-3"	1-#8x1¼ws¹	100	2560	1725	IUS2.56/14	2	12-3"	—	105	2565	1835	LF2514	2	14-3"	1-#8x1¼ws¹	100	3235	2385				
16	LT2516	2	6-3"	1-#8x1¼ws¹	100	2560	1725	IUS2.56/16	2	14-3"	—	105	2575	1950	MIU2.56/16	2½	24-3"	2-10dx1½	270	4930	3485				
ADI 80 Joist Width = 3 1/2"																									
11-7/8	LT351188	2	6-3"	2-10dx1½	100	2560	1725	IUS3.56/11.88	2	12-3"	—	105	2375	1695	LF3511	2	12-3"	1-#8x1¼ws¹	100	2880	2270				
14	LT3514	2	6-3"	2-10dx1½	100	2560	1725	IUS3.56/14	2	12-3"	—	105	2375	1695	LF3514	2	14-3"	1-#8x1¼ws¹	100	3235	2385				
16	LT3516	2	6-3"	2-10dx1½	100	2560	1725	IUS3.56/16	2	14-3"	—	105	2375	1695	MIU3.56/16	2-½	24-3½"	2-10dx1½	270	4930	3485				
18	MIT418	2-½	8-3-½"	2-10dx1½	380	3480	2415	No IUS for these depths							MIU3.56/18	2-½	24-3½"	2-10dx1½	270	4930	3485				
20	MIT420	2-½	8-3-½"	2-10dx1½	380	3480	2415								MIU3.56/20	2-½	28-3½"	2-10dx1½	270	4930	3485				
22	HIT422	3	10-3-½"	2-10dx1½	380	3730	2700								MIU3.56/20	2-½	28-3½"	2-10dx1½	270	4930	3485				
24	HIT424	3	10-3-½"	2-10dx1½	380	3730	2700								MIU3.56/20	2-½	28-3½"	2-10dx1½	270	4930	3485				

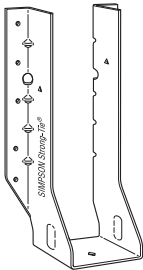
1,WS = wood screw

Table 19

45° Skew					Factored Resistance			Adjustable Height						Factored Resistance			Field Slope & Skew				Factored Resistance		
Joist Height	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	Normal SPF	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	Normal SPF	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	Normal SPF		
			Header	Joist						Header	Joist						Header	Joist					
ADI 40, 60 Joist Width = 2 1/2"																							
9-1/2	SUR/L2.56/9	3-3/16	14-3-1/2"	2-10dx1 1/2	385	3945	2780	THAI322	2-1/4	6-3"	2-10dx1 1/2	—	2740	2075	LSSUH310	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	2620	1850		
11-7/8	SUR/L2.56/11	3-3/16	16-3-1/2"	2-10dx1 1/2	385	3945	2780	THAI322	2-1/4	6-3"	2-10dx1 1/2	—	2740	2075	LSSUH310	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	2620	1850		
14	SUR/L2.56/14	3-3/16	18-3-1/2"	2-10dx1 1/2	385	3945	2780	THAI322	2-1/4	6-3"	2-10dx1 1/2	—	2740	2075	LSSUH310	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	2620	1850		
16	SUR/L2.56/14	3-3/16	18-3-1/2"	2-10dx1 1/2	385	3945	2780	See Wood Construction Connectors Catalog for hanger selection							LSSUH310	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	2620	1850		
ADI 80 Joist Width = 3 1/2"																							
11-7/8	SUR/L410	2-7/16	14-3-1/2"	6-3-1/2"	1395	4065	2875	THAI422	2-1/4	6-3"	2-10dx1 1/2	—	2740	2075	LSSUX410	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	3055	2160		
14	SUR/L414	2-7/16	18-3-1/2"	8-3-1/2"	1555	4095	2895	THAI422	2-1/4	6-3"	2-10dx1 1/2	—	2740	2075	LSSUX410	3-1/2	14-3-1/2"	12-10dx1 1/2	1220	3055	2160		
16	SUR/L414	2-7/16	18-3-1/2"	8-3-1/2"	1555	4095	2895	See Wood Construction Connectors Catalog for hanger selection							See Wood Construction Connectors Catalog for hanger selection								
18	SUR/L414	2-1/2	18-3-1/2"	8-3-1/2"	1555	4095	2895																
20	SUR/L414	2-1/2	18-3-1/2"	8-3-1/2"	1555	4095	2895																
22	See Wood Construction Connectors Catalog for hanger selection																						
24																							

Notes:

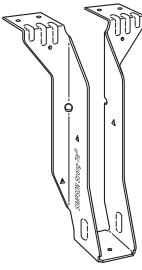
- 1. All nails are common wire nails unless noted otherwise.
- 2. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturer.
- 3. THAI hangers require a minimum of 4 top and 2 face nails installed.



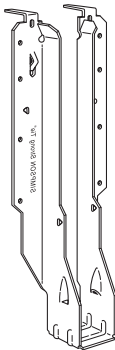
LF

LF – 18 gauge
LT – 18 gauge

The LF and LT series feature fast and easy installation. No web stiffeners required and only one screw secures joist in hanger.



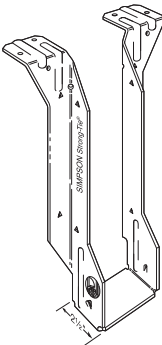
LT



IUS

IUS – 18 gauge

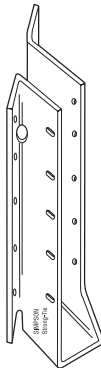
The IUS is a new hybrid hanger that incorporates the advantages of face-mount and top-flange hangers. Joist nails are not required.



MIT

MIT – 16 gauge

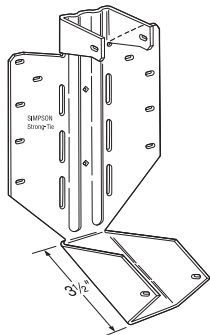
The MIT's Positive Angle Nailing helps eliminate splitting of the I-joists' bottom flange. Features uplift capacity and extended seat design.



SUL

SUR/L – 16 gauge
SURI/LI – 16 gauge

All models are skewed 45°. The installation of these hangers does not require a beveled end cut. Web stiffeners required when used with I-joists.



LSSU

LSSUH310, LSSU410 – 16 gauge

LSSU models provide uplift capacity and can be field sloped and/or skewed to 45°. Web stiffeners required when used with I-joists.

Power Joist® Framing Connectors — Double Power Joists



Table 20

Top Flange					Factored Resistance			Face Mount					Factored Resistance			45° Skew				Factored Resistance		
Joist Height	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	SPF	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	SPF	Model	B Dim	Fastener Type		Uplift (115)	Normal DF/SP	SPF	
			Header	Joist						Header	Joist						Header	Joist				
Double ADI 40, 60 Joist Width = 5"																						
9-1/2	MIT39.5-2	2-½	8-3-½"	2-10dx1½	385	3775	2730	MIU5.12-9	2-½	16-3-½"	2-10dx1½	270	4550	3215	HSUR/L5.12/9	2-¾	12-3-½"	2-10dx1½	195	2995	2350	
11-7/8	MIT311.88-2	2-½	8-3-½"	2-10dx1½	385	3775	2730	MIU5.12-11	2-½	20-3-½"	2-10dx1½	270	4550	3215	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1½	195	4195	2965	
14	MIT314-2	2-½	8-3-½"	2-10dx1½	385	3775	2730	MIU5.12-14	2-½	22-3-½"	2-10dx1½	270	4930	3485	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1½	195	4195	2965	
16	MIT5.12/16	2-½	8-3-½"	2-10dx1½	385	3775	2730	MIU5.12-16	2-½	24-3-½"	2-10dx1½	270	4930	3485	HSUR/L5.12/11	2-¾	16-3-½"	2-10dx1½	195	4195	2965	
Double ADI 80 Joist Width = 7"																						
11-7/8	WPI411.88-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU412-2	2-½	22-3-½"	8-3-½"	1865	5780	4210	HU412-2X ³	2-½	22-3-½"	8-3"	1400	4355	3080	
14	WPI414-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780	HU414-2X ³	2-½	26-3-½"	12-3"	2015	7450	5265	
16	WPI416-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780	HU414-2X ³	2-½	26-3-½"	12-3"	2015	7450	5265	
18	WPI418-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780	HU414-2X ³	2-½	26-3-½"	12-3-½"	2015	7450	5265	
20	WPI420-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780	HU414-2X ³	2-½	26-3-½"	12-3-½"	2015	7450	5265	
22	WPI422-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780	See Wood Construction Connectors Catalog for hanger selection							
24	WPI424-2	2-½	3-3-½"	2-10dx1½	—	4725	3775	HU414-2	2-½	26-3-½"	12-3-½"	2685	7025	5780								

Table 21

Field Slope					Factored Resistance			Adjustable Height				Factored Resistance		
Joist Height	Model	B Dim	Fastener Type		Uplift (115)	Normal		Model	B Dim	Fastener Type		Uplift (115)	Normal	
			Header	Joist		DF/SP	SPF			Header	Joist		DF/SP	SPF
Double ADI 40, 60 Joist Width = 5"														
9-1/2	LSU5.12 ⁴	3-½	24-3-½"	16-10dx1½	950	2595	2245	THAI-2 ²	2-½	6-3"	2-10dx1½	—	2935	2935
11-7/8	LSU5.12 ⁴	3-½	24-3-½"	16-10dx1½	950	2595	2245	THAI-2 ²	2-½	6-3"	2-10dx1½	—	2935	2935
14	LSU5.12 ⁴	3-½	24-3-½"	16-10dx1½	950	2595	2245	THAI-2 ²	2-½	6-3"	2-10dx1½	—	2935	2935
16	See Wood Construction Connectors Catalog for hanger selection							See Wood Construction Connectors Catalog for hanger selection						
Double ADI 80 Joist Width = 7"														
11-7/8	See Wood Construction Connectors Catalog for hanger selection							See Wood Construction Connectors Catalog for hanger selection						
to														
24														

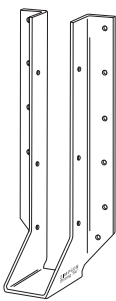
Notes:

- 1. Shaded hangers require web stiffeners at joist ends. Web stiffeners may be required for non-shaded hangers by I-joist manufacturer.
- 2. THAI hangers require a minimum of 4 top and 2 face nails installed. THAI-2 must be special ordered, specify hanger seat width between 3-1/8" and 5-5/16".
- 3. Skewed option must be special ordered. Specify skew angle and direction (i.e. HU412-2X, R45°).
- 4. The LSU is field slopable only. Skew options must be special ordered from the factory.



MIU

MIU – 16 gauge
The MIU series features 16 gauge steel and extra nailing for higher loads than the IUT.



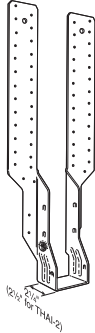
HU

HU – 14 gauge
The HU series features uplift capacity and a large selection of sizes and load ranges. HU hangers have triangle holes that can be filled for increased loads. Web stiffeners required when used with I-joists.



WPU

W, WI: Top flange – 12 gauge
Stirrup – 12 gauge
WP, WPI, WPU: Top flange – 7 gauge
Stirrup – 12 gauge



THAI

THAI – 18 gauge
This hanger has extra long straps and can be field-formed to give height adjustability and top-flange hanger convenience. Positive angle nailing helps eliminate splitting of the I-joist's bottom flange. Not all strap nail holes need to be filled for maximum nailing. Web stiffeners required when used with I-joists.



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Power ProductsSM Warranty

Limited Lifetime Warranty

Anthony Forest Products Company warrants that its Power Joist®, Power Beam®, Power Header®, Power Log®, and Power Plank® are free from defects in design, materials and workmanship. When installed and finished according to our published installation instructions and accepted engineering standards, our Power Products will perform in accordance with our current published specifications for the lifetime of your home or building.

Warranty Limitations

Anthony Forest Products Company must be given a reasonable opportunity to inspect the product before it will honor any claims under this warranty. If after inspection and verification of the problem, we determine that there is a structural failure covered by the warranty, we will pay to the owner of the structure an amount of money equal to the reasonable cost of the defective product, or, at our option, replace any defective product. This warranty does not cover the cost of installation, removal of the defective product, or reinstallation of replacement product. Checks, cracks or splits of Power Products resulting from the natural physical properties of wood are not covered — unless the condition causes a structural weakness.

Please protect your investment! Power Products must be protected from exposure to moisture from whatever source by proper building standards. Exposure to moisture beyond incidental exposure during normal construction periods may cause product failure and will void this limited warranty.

This warranty shall apply only if the Power Product is subjected to normal use and exposure. The products must be stored, handled, and installed in a manner generally accepted in the industry, and in accordance with our current published installation instructions and in compliance with our product design specifications relating to spans and loading. Failure to follow such instructions will void this warranty.

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This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

For information on the Power Products or our warranty, contact us at:

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